

# AMERICAN VETERINARY REVIEW.

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# AMERICAN VETERINARY REVIEW.

MARCH, 1906.

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*Correspondents will please note the change in address of Dr. Roscoe R. Bell, from Seventh Avenue and Union Street, to 710 East Second Street, Borough of Brooklyn, New York City.*

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## EDITORIAL.

### EUROPEAN CHRONICLES.

PARIS, FRANCE, Jan. 15, 1906.

IMMUNIZATION AGAINST TUBERCULOSIS. — Lately several methods have been experimented with to reach this great means of prophylaxy against tuberculosis, viz., immunization, and many satisfactory results have been obtained and published. The experiments made in Saxony, at the Hygienic Institute of the Veterinary School of Dresden, by Prof. Klimmer; the very many carried on to test the Jennerization of von Behring in Germany; and especially the more recent ones at Melun, which were concluded with such brilliant results that at the conference Prof. Vallée held the day of the general autopsies he proclaimed that antituberculous vaccination of cattle had been scientifically and practically established, and proposed that a telegram of felicitations be sent to Prof. von Behring; those that Koch, Schütz, Neufel, and Miessner have published in the *Archiv. fur Thierheilkunde* — everywhere the battle is raging, and there is no doubt that the day is approaching when this immunization will be a realized fact. Of course, there will be failures, and if the method of Lignières, which had given so much hope to his friends, has not answered their expectations, the last animal (the bull of the experiment), which it was thought, even by Prof. Vallée, might resist a test of infection,

has since been found to be extensively infected. These failures are stimulants for more investigations. The last is certainly not told. We have not yet heard from America, and we know that Pearson and Gilliland are also on the investigation path. And, besides, are we not told by the learned successor of Nocard that, with Dr. Roux, of the Pasteur Institute, they had found a vaccine, which they have already tried on over one hundred animals—a vaccine different from all others that have been used. It is not obtained from human, bovine, or any other source already tried, but the attenuated bacillus with them is obtained from horses. The results so far are very satisfactory, and the practical value of this new method is said to be superior to any thus far presented. Let us wait for their publications, and offer them our best wishes for success.

At the time of my writing I understand that the results obtained at Melun have made some rich breeders of Normandy cattle desirous to test the method upon a large scale, and that steps are being taken to carry out the experiments with all possible care.

Decidedly, there are great chances for bovine tuberculosis to be a thing of the past in a few short years.

\* \* \*

But that does not mean that tuberculosis will not still be full of interest, and that valuable information will not always be found.

Indeed, in the *Revue of Leclainché*, of Dec. 15, there is a *résumé* of the observations from Kossel and Weber, which were published in the *Berliner Tierärztliche Wochenschrift*, on the practical results of new researches upon the relations between human and animal tuberculosis, in which our readers will be interested:

#### *I. Tuberculosis of Domestic Animals.*

(a) *Bovine*.—(1) Bovine tuberculosis is produced by bacilli of the bovine type. It results from contagion by bacilli from given localizations. (2) Contagion proceeds almost without exception from bovines affected with tuberculosis of the udder,



the intestines, the uterus, or the lungs; it takes place through the milk, the intestinal contents, excretions of the uterus, or the respiratory tract. (3) The disease of bovines can be produced by bacilli of the bovine type obtained from other mammalia, such as sheep, goats and swine. (4) Human tuberculosis would be a danger for cattle in the rare case when it proceeds from bovine type. (5) Aviary tuberculosis seems, under natural conditions, but little dangerous to cattle. (6) To prevent bovine tuberculosis, contagion to healthy animals is to be considered.

(b) *Porcine*.—(1) In tuberculous swine, bacilli of bovine type are found almost without exception. (2) Tuberculosis of swine has its ordinary origin in bovine tuberculosis; later it occurs from pig to pig. It is not impossible that tuberculosis passes from other mammalia and birds to pigs. (3) Human tuberculosis can be transmitted to swine, and that as easy as its own disease. (4) The principal source of contagion consists in the excretions or remains of diseased animals, containing living bacilli. The greatest danger is in the feeding of the remains from dairies.

(c) *Of Other Domestic Mammalia*.—(1) It most commonly proceeds from bovine tuberculosis. (2) Consequently prophylaxy of bovine tuberculosis is followed by diminution of tuberculosis in swine and other domestic mammalia.

(d) *Tuberculosis of Domestic Birds*.—(1) Tuberculosis of birds (chickens, pigeons, ducks, geese), are generally due and spread by bacilli from fowls. In parrots, human bacilli have been found. (2) The source of contagion comes in the first place, from intestinal evacuations, and again from the invaded regions of the diseased birds.

## II. *Human Tuberculosis*.

(1) In the tuberculous lesions of man, bacilli of human type are principally found. (2) Contagion takes place first of all from man to man. (3) The prophylaxy must principally consist in measures likely to avoid the direct or indirect passage of the germs of tuberculosis into healthy subjects. (4) Besides,

it is possible that bacilli of human type be transmitted to man by the meat of tuberculous swine. (5) The fact that bacilli of the bovine type have been found in tuberculous lesions of man shows that the human body is able to be a medium for culture of bacilli from virulent secretions (milk) or from tuberculous meat of animals. (6) In a remarkable number of cases, the tuberculous lesions of man from bovine bacilli remain limited to the door of entrance and to the corresponding lymphatic glands or to those only. Yet, in some cases, the lesions will spread, and may end fatally. (7) The ingestion of food taken from tuberculous animals and containing living bovine bacilli is not without danger. (8) Careful inspection of meats insures some protection against infection; the meat must be well cooked or roasted. (9) Possibility of transmission to man from meat and its products shall be reduced by prophylaxy of bovine tuberculosis. Bacilli can be destroyed by boiling of the milk. (10) Tuberculosis of domestic birds, used for food, does not seem to have any part in the etiology of human tuberculosis.

\* \* \*

These important observations of Kossel and Weber, which throw so much light on various points relating to tuberculosis of man and animals are much strengthened by the communication of Prof. Petit, of Alfort, made at the Tuberculosis Congress last fall.

After recalling as wrong the generally admitted opinion that dogs and cats, as well as goats, are refractory to tuberculosis, Prof. Petit mentions the work of Prof. Cadiot upon tuberculosis of dogs, and gives a table of his own observations. At Alfort, where he makes the post-mortem of all dogs that die in the hospitals of the school, he found that the percentage went up from 1900 to 1904 in the proportion of 4.57 to 9.11. The number of tuberculous dogs should have been much higher if on all the dogs brought to the clinics the tuberculin test had been applied. With cats, the proportion is a little lower.

In carnivora all the varieties of tuberculosis observed in

man are found; they have identical characters: caseous pneumonia, enormous adenopathy without pulmonary lesion, tuberculizations of the lymphatic glands of the mesentery, liver, kidneys or spleen, nodular peritonitis with more or less ascites, serous pericarditis, pleurisy, tuberculous cutaneous ulcerations. These last lesions, contrary to those found in man (lupus), are very rich in bacilli<sup>1</sup> and constitute an open tuberculosis very dangerous for those who may be near it.

Prof. Petit has made a record of the presence of tuberculosis, especially in dogs belonging to owners of wine shops, where undoubtedly they are contaminated by the number of people who spit in all directions, and who by their visits to those establishments become themselves doubly exposed, having around them two implacable enemies—alcoholism and contagion. The researches of the author and those of Dr. F. Arloing show that dogs are infected through the digestive tract.

After showing how dangerous carnivora affected with tuberculosis are to mankind, Prof. Petit concludes: "*All suspicious carnivora ought to be tuberculed and destroyed without hesitation when presenting the characteristic reaction.*"

\* \* \*

Interesting to the seachers in laboratories are also the valuable observations of Prof. Moussu on the cultures of tuberculosis *in vivo* which he has lately made known. Having introduced into the abdominal cavity of animals, undoubtedly tuberculous, cultures of tuberculosis on potatoes, which were enclosed in filters, he observed that, like the cultures in collodion sacs, those in filters gave results which in appearance were comparable; exchanges between the living organisms and the media of culture could not be doubted. The conclusions are: (1) When in a tuberculous organism, a virulent culture of tuberculosis, hermetically closed and properly prepared as mentioned above, is introduced, a thermic reaction comparable to that produced by an injection of tuberculin is promoted. (2) Afterwards the temperature returns more or less rapidly to the normal standard, but later on goes up and down around this normal without

great variations, and as long as a secondary cause does not interfere. (3) The general condition of the tuberculous subjects does not seem to be affected in a sensible manner by the presence of this foreign culture in their abdominal cavities.

\* \* \*

A HORSE CASE IN COURT. — Horse cases at court are, I think, rare in the United States. Indeed, we do not hear of any except very seldom, and when one occurs it takes years for another to follow. It is not so, I believe, in other countries, and now and then we read of them in the English papers. Those of December have given the records of one which was interesting in its various points, and gave an opportunity for the Lord Chief Justice to well define the duties of the veterinarian when called to examine an animal for soundness as an expert.

The action turned upon that often vexed question as to whether the horse had spavins or coarse hocks. If he was spavined, of course it should have been mentioned in the certificate. The jury decided that there were no spavins, and the defence accepted that the hocks were coarse. Of course, the veterinarian won his case. Four veterinary authorities were present on each side; and it seems that for some there is very little difference between spavins and coarse hocks, while the others said that there was a distinction, viz.: that "coarse hocks are only enlarged ridges on the bones, whereas spavin is a disease affecting the joint surfaces of the bones, and that when the spaces or grooves between the bones can be felt there is no spavin."

As to the duties of the veterinarian acting as an expert, said the Lord Chief Justice: "He is bound to bring to bear on the subject a reasonable and proper amount of experience and knowledge, and he is bound to act carefully and without negligence or breach of duty. He is not bound to be right, because no man can always be right; but he is bound to exercise his duty with proper competent skill."



The profession congratulates this veterinarian who allowed this action to be brought against him, in defending his honest opinion, and having the courage to back it up even at the danger of heavy financial losses; and, concludes the *Veterinary Journal*, "Such a case forms a precedent worth following, and it should make our younger members consider whether it is not worth while to at once join some powerful society, such as is provided by the 'Veterinary Mutual Defence and Benevolent Association,' whose funds and moral support are intended for those whose pecuniary means will not enable them to stand a heavy law suit."

I hear that it is proposed to buy the horse, destroy him, and make known the result of a post-mortem examination of the joints which were the subject of contention between the veterinarians in the case.

\* \* \*

INFECTIOUS ANÆMIA OF HORSES. — In previous articles I have called the attention of our readers to the investigations carried out by Prof. Vallée and Mr. Carré on "Infectious Anæmia of Horses." Recently they presented to the Académie des Sciences of Paris another note on the same disease, which I may be allowed here to resume.

After having established the infectious nature of the affection, they mentioned the state of true *latent* infection of some horses, which to all appearances recovered from a serious attack, and while presenting all the characters of perfect health for many months, still possessed all their infecting power, and thus, as *virus carriers*, were dangerous in gatherings of horses. This is true because in all the infected animals, no matter at what time they are examined, *their urine is rich in albumen*. As the blood of these animals is virulent in all stages of the disease, it was to be supposed that the urine was also; experiments have proven it. Two horses received under the skin cleaned urine from two subjects sick in various stages of the disease, and both contracted a fatal typic infection. Another horse in splendid condition took in four meals, the first, third,

eleventh and thirteenth day of the experiment, 800 c. c. of albuminous urine from a horse which was infected for six months, but to all appearances was cured. The first signs of infection were noticed on the twenty-fifth day of the experiment and the disease was at its highest point on the thirty-eight.

The possibility of the infection by the digestive tract is thus well confirmed, and with it the infecting power of the urine well demonstrated.

\* \* \*

The diarrhœic fæces expelled by the sick animal, and also the solid excrements, frequently bloody, are no doubt also as virulent as the urine. All dejections from the sick animals are therefore the ordinary means of contagion, and the digestive tract the ordinary door of entrance for it. Experimental results confirm the observations which were made in the infected districts where, at all places, the manure and urine-collecting holes are in so close connection with wells and cisterns whose contents are used for animals. Indeed, the nearer they are, the more rapid and fatal is the contagion.

The condition of the resistance of the virus explains also the pathogenous influence of the water. Exposed for six months to a temperature lower than  $0^{\circ}$  C. the virus loses none of its properties. It still keeps all of its virulence after exposure for a month to a temperature of a laboratory; it requires a heat of  $100^{\circ}$  C. to destroy it.

The prophylaxy is, from these observations, laid out as follows: (1) Isolate or, better, *kill* the sick animals; or, at least, gather and disinfect properly all liquid and solid dejections; (2) in infected districts never give to other horses water to drink unless this has been boiled or is spring water; (3) never purchase a horse coming from a region suspected of infection, or at least never introduce one among healthy animals without being certain that its urine is not albuminous.

\* \* \*

ASSOCIATIONAL COURTESIES. — I am sure that the REVIEW

does good; **that is** acknowledged by many; yes, by all who read it, and I am very thankful to the December number for the good it has done in giving me the courage to say, as I find one of my co-editors has written, "Wake up, Secretaries!" Let me explain, in a few words. Some time ago (I believe nearly two years), a worthy member of our profession here expressed the desire to become connected with one of our associations in America. All that I could hope to obtain for him was an honorary membership. The President of one of our organizations kindly accepted my suggestion to propose my friend, with the result that the election was, I believe, unanimously carried.

More recently, at the last meeting of the National Association, the A. V. M. A., two French veterinarians were elected honorary members; and yet, in either case, one after two years, the other after five months, *no official notice* has been given to those three gentlemen of their election—at least, as I am writing—except a few words in the REVIEW recording the events of the meetings where the elections had taken place.

I have written to the Presidents of the associations who were in office at the times of the elections. I have received very encouraging promises; but that is all.

Certainly it is a very queer way for American veterinary associations to honor their foreign members. It seems to me that to honor one day, to ignore the next, is not proper ethics. At any rate, it is not American.

*Come, Messrs. Secretaries, wake up!*

\* \* \*

BIBLIOGRAPHY.—In Europe, I think veterinarians write more than in America—at least on the continent. In France, Germany and Italy new works on veterinary science are undoubtedly more frequently issued. Are the publishers here more ready to accept the manuscripts offered to them? Is it that the demand for new books is greater, or that the veterinarian here reads more than over there? I do not know, but the fact exists, I believe, anyhow.

To-day I find on my desk an Italian work, "Trattato di

Technica e Terapeutica Chirurgica degli Animali Domestici" ("Treatise on the Technic and Surgical Therapeutics of Domestic Animals"), by Dr. H. Lanzillotti-Buonsanti, the able director of the Royal Veterinary School of Milan. Author of quite a large number of works of great value in Italian, Professor Buonsanti begins in this, the third volume of his work, a volume which is to treat essentially of the therapy of the extremities. This first part, containing nearly 200 pages, and illustrated with 111 figures, gives first a review of the anatomy of the extremities, examines concisely the physiology of these parts of the organism, and then enters into the subject by a general consideration of the diseases pertaining to the legs, to the general diagnosis of lameness, the manipulations and various examinations of the disabled leg, and of every region, compared with those of the other extremity. The use of cocaine in diagnosis receives careful attention, etc. Finally, in Chapter IX., it gives a general *résumé* of the diseases of the extremities, with their most important and characteristic symptoms.

First part only of Volume III., it is intended to be followed by four others to complete the work.

\* \* \*

I also beg to acknowledge to Dr. Dalrymple the receipt of Bulletin 84, where he gives the people of Louisiana in a succinct and practical form information of great value on Texas fever. This is a mode of educating the public that can do much good.

The *Agricultural Journal of the Cape of Good Hope* contains two interesting articles—one from W. Robertson, M. R. C. V. S., bacteriologist to the Department of Agriculture, who writes on swine fever, hog cholera, or pig typhoid; and one by D. Hutcheon, M. R. C. V. S., Acting Director of Agriculture, on contagious pleuro-pneumonia. Of course, besides the scientific manner with which these excellent subjects are treated, it must be remembered that one of the objects is to give the people a good and sound idea of these diseases, which, I dare say, cost the lives of many animals.

A. L.



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"DOPING" OF HARNESS-RACING HORSES.

The scandal in connection with the winning of the gold cup at Memphis, in the autumn of 1904, by Major Delmar, owned by Mr. E. E. Smathers, and the unexpected defeat of the peerless trotting queen, Lou Dillon, owned by Mr. C. K. G. Billings, is a matter of news with which most of our readers are familiar. It is neither the province nor the desire of this magazine to aid in the dissemination of the news concerning the charges and countercharges of the contending owners. The Secretary of the racing association makes the charges upon the affidavits of discredited and dismissed employés of the owner of Delmar, one of whom swears that he administered eight ounces of mercury, enclosed in a rubber bag, to Lou Dillon before the race, at the direction of the opposing parties. The Delmar people deny this, and show that the persons making these charges are criminals and unworthy of any belief. A veterinary surgeon named Fehr bobs up in California, and says that he gave the mare belladonna at the direction of Murray Howe, Secretary of the Association, because the mare suffered from "thumps." Howe and Billings say they never heard of Fehr. And so, with accusations and denials, the matter goes before the Trotting Board for a complete threshing out, and we trust the guilty parties, whether the crime be "doping" or "lying," will get their just deserts.

The circumstances here narrated have brought into the daily press a mass of twaddle about "doping" trotting horses, the inference being that stimulating medicines are commonly given to such animals to increase their speed, or their endurance, or to throw vim and energy into them in order that they may make a supreme effort to get every fraction of fleetness out of their locomotory apparatus.

It is well known that such practices are resorted to among the trainers of thoroughbreds or running horses, and it is likely that in many cases it is accompanied by success. Concentrated medicines whose action is to stimulate circulation and respiration (nitro-glycerine, atropine, cocaine, etc.) may be injected

subcutem just prior to the effort, which is usually over in a few minutes, before the effects of the drug have died out of the system, and it may cause the animal to assume a boldness in effort for the time being greater than it would exert without the stimulation thus produced.

But the articles which have appeared describing this process as being practiced in trotting and pacing races, are merely sensational and can have no basis of truth. When one bears in mind that in harness racing the delay in scoring often consumes half to three-quarters of an hour, or longer, with such a waste of energy that every contestant is nearly exhausted before the word is given for a start, it becomes evident that no sustaining drug could hold a stimulant power to avail after so long a time. Then, again, in place of the dash of a mile or less which the thoroughbred has to accomplish, the harness racer has to repeat its performance heat after heat—so that the syringe would have to be resorted to very frequently, which could not safely nor reasonably be done.

While we do not of our own knowledge know that the hypodermic injection of active stimulants is not practiced in harness racing, it does not seem logical that it is. The method of administering alcoholic and other stimulants between heats, both internally and externally, of course, is the rule, and there can be no two opinions as to the benefits obtained; but we feel certain that the sensational statements as to the popularity of "doping" the light harness horse is a canard unworthy of any credence.

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#### A VERSATILE ILLUSTRATION.

We have heard of the efforts of country newspapers to keep up to date by having constantly on hand electrotype cuts of various types of human faces, so that in case of emergency, as the sudden death of a distinguished man, a cut with physiognomy somewhat like that of the departed would appear in a prominent position in the next issue. Thus the publisher secured considerable prestige by the evident facilities possessed for

gathering the news of the day. We were not prepared, however, to see this practice invading veterinary journalism; but we find that in the Philippines all carabao look alike to the veterinarians there, but all veterinarians do not look alike to the carabao. In the February (1905) number of the REVIEW we published, on page 1106, a letter from Dr. R. H. McMullen, of the Manila Board of Health, and in connection therewith a photo of the only white water buffalo ever imported into the Philippines from China. Beneath the cut we remarked: "Those who know Dr. McMullen will recognize the figure in the foreground as the talented veterinarian who formerly lived in Buffalo, N. Y., and who recently contributed a valuable article to the REVIEW upon one of the tropical diseases of animals." We were amazed to find this same picture doing duty for the *Quarterly Bulletin of the Chicago Veterinary College* in December, 1905, in an article by William Thompson, M. D. C., Board of Health, Manila, P. I., who contributed an article to that number on the "Purchase of Carabao (Water Buffalo) in China for the Restocking of the Philippine Islands." One might think the photo had been borrowed from Dr. McMullen, but this supposition is dissipated by a caption beneath the picture entitled "Dr. Thompson Inspecting." If any other veterinarians in the Archipelago would like to use this illustration, we would be glad to loan them the electrotpe, thus saving considerable expense.

\* \* \*

THE REVIEW feels considerable embarrassment in having to again ask the indulgence of its collaborators and correspondents, who have simply "swamped" it with articles and communications of all kinds, many of which necessarily have to be held for future issues. In an effort to meet the great demand upon its pages the REVIEW this month prints nearly one hundred and seventy-five pages the greatest number in her history—making a total for the volume now closed of nearly fifteen hundred pages. Notwithstanding this generous provision, our friends, like Oliver Twist, cry "More!" All will be accommodated, but a little patience is necessary where so much is demanded.

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## ORIGINAL ARTICLES.

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### THREE YEARS' EXPERIENCE<sup>R</sup> WITH PROTECTIVE INOCULATIONS AGAINST TUBERCULOSIS IN CATTLE BY THE VON BEHRING METHOD.

CONDUCTED ON THE HUNGARIAN ESTATES OF PRINCE LUDWIG  
OF BAVARIA AT SARVAR.

BY DR. STRELINGER, DIRECTOR OF VACCINATIONS.

Translated by JOHN V. LADDEY, D. V. S., and read before the Veterinary Medical  
Association of New Jersey, at Trenton, Jan. 11th, 1906.

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The first protective inoculation was made in the beginning of September, 1902, and by the end of July, 1905, a total of 880 calves had been subjected to the process. All inoculations were performed exactly according to the directions of von Behring, and we have had to record in not a single case any unfavorable complications, which could be traced back to the inoculation itself.

All of the calves vaccinated were subjected every six months to rigorous clinical examinations, in addition to a tuberculin test. The data, which we have gathered from clinical examinations and tuberculin tests, as well as from some post-mortem examinations, gave us the standard by which we now gauge the results so far obtained. Our oldest animals vaccinated are now 3-3½ years of age. At the close of the month of August, 1905, 590 head of these animals were tested with tuberculin; it is to be noted, that this figure includes only calves, where, in each case, at least a year's time had elapsed since the last protective inoculation had been administered.

I believe that our experiences will serve as useful evidence in deciding the question, whether von Behring's immunization-method, the experimental proof of which is generally acknowledged, is, to agriculture, of that practical value which we could fairly expect of it. I am greatly indebted to Prince Ludwig, of Bavaria, as well as the Administrator of his Estates, Baron Leonrod, whose altruistic spirit and assistance in all



matters pertaining to the investigations enabled me to begin experiments, under practical conditions, soon after the appearance of the first publications by von Behring and his collaborators, and now, that three years since the introduction of this method have passed, to compile interesting observations.

The conclusions, drawn from experiments made with a view to testing the von Behring method of bovovaccination, are based upon the following results, which I have obtained with this method in several groups of animals.

#### I.

In March, 1903, on the Estate at Fuetzue, 16 animals were set aside; of these 13 were immunized strictly according to the von Behring method, while the remaining 3 were submitted to only a single protective inoculation. The animals in question were artificially fed, sound and healthy calves. Into the same stable with these 16 head, 12 other healthy calves, also artificially fed and of about the same age, were placed; these latter 12 head were not submitted to the immunization process. The stable at Fuetzue is not only the oldest, but also without doubt the worst tuberculosis-infected one on the Estate; in this same building, at the time of our experiment, a large number of tuberculous animals, in a more or less advanced stage, were stabled. These immunized and non-immunized calves were kept together with these tuberculous animals for 9 months under exactly the same conditions (same feeding-method, etc.). At the end of this time both groups were subjected to a tuberculin test. The 16 immunized calves showed absolutely no reaction; however, of the 12 non-immunized calves, already after that comparatively short time, 6 head (50%) showed undoubted reaction, 3 head (25%) remained doubtful, while 3 head (25%) showed no reaction whatever.

The fact, that all immunized calves proved not only sound clinically but also without reaction upon a tuberculin test, is of greater significance, when it is considered that all these protectively inoculated calves remain up to the present time,  $2\frac{1}{2}$  years since the beginning of the experiment, entirely healthy

and show no reaction whatever to tuberculin. (See Table I.)

## II.

On the Estate at Soemjen 16 calves were raised, which originated from reacting cows; they were fed by their dams and kept in a stable known to be infected with tuberculosis. They were, at the proper time, submitted to the typical immunization process.

Twelve of the calves reacted upon the inoculation extraordinarily actively, and we are well justified according to the researches of von Behring and Römer, to assume from this, that the animals, at the time of the inoculation, had already succumbed to the influence of tubercular virus; this assumption, in view of the described epizootic conditions, is more than natural. One of the animals even proved to be infected with tuberculosis already at the time the clinical examination was made (Protocol No. 11, Animal No. 233). All the animals of this group, with the exception of animal No. 233 just referred to and of a second animal (No. 252), which will be specially mentioned in another group (Table No. IV), did not react to the tuberculin test. The results obtained from the examination of this group of animals appear to me, from a practical point of view, to be especially significant, because they were undertaken under conditions which are not rare in animal husbandry, especially in large dairies, where frequently general and extensive infections from tuberculosis exist. They permit us to hope, that this protective inoculation will prove to be of value and possible of being carried out under the most unfavorable conditions, without any disturbance to the general affairs of an establishment.

## III.

One group of 6 animals was tested, as to its resistance toward artificial infection with tuberculous virus. For this purpose 5 animals, which had been immunized by different methods, were tested, together with a control animal, by means of a highly virulent bovine culture, which had been sent from Marburg for the purpose.

A total of 7 cattle were immunized in the following manner :

1. Animal No. 366—4 mo's of age—  
on Oct 15/02 0,004 g Vac. Tb. No. 1 intrav.\*
2. Animal No. 384—5½ mo's of age—  
on Oct. 9/02 0,004 g Vac. Tb. No. 1 intrav.  
Dec. 16/02 0,02 g Vac. Tb. No. 1 intrav.
3. Animal No. 395—3 mo's of age—  
on Sept. 27/02 0,004 g Vac. Tb. No. 1 intrav.  
Nov. 24/02 0,02 g Vac. Tb. No. 1 intrav.
4. Animal No. 218—2 yrs. of age—  
on May 30/03 0,0025 g Vac. Tb. No. 1 intrav.\*\*
5. Animal No. 222—2 yrs. of age—  
on July 2/03 0,005 g Vac. Tb. No. 1 intrav.  
July 25/03 0,01 g Vac. Tb. No. 1 intrav.
6. Animal No. 298—2 yrs. of age—  
on Aug. 7/03 0,01 g Vac. Tb. No. 1 intrav.  
Aug. 19/03 0,015 g Vac. Tb. No. 1 intrav.
7. Animal No. 308—2 yrs. of age—  
on Nov. 19/03 0,02 g Vac. Tb. No. 1 intrav.

On Oct. 5, 1903, animals No. 1, 2, 3, 4 and 5 and a not previously treated control animal of 2 yrs. of age (No. 282) were injected intravenously with 0,0005 g of Vac. Tb. 18 (Bovine culture, 3 weeks old). On Dec. 11, 1903, 2 months after the artificial infection, these 6 animals were subjected to a tuberculin test. Animal No. 366 reacted distinctly, while the reaction in animals 384 and 395 was of a short duration, their general condition not being disturbed. In the case of the control animal (No. 282) an unusually marked reaction presented itself, an elevation of  $41^{\circ}\text{C}$ . ( $105\frac{1}{2}^{\circ}\text{F}$ .) continued for two days, and all superficial glands became swollen and proved sensitive upon manipulation. This animal refused all food during these two days and showed itself so sick, that slaughtering was at that time considered advisable. It recovered, however, after several weeks, but on Aug. 24, 1904, it again reacted strongly to another tuberculin test.

Animals No. 218 and 222 did not react to the tuberculin

\* *i. e.* 0,004 g Marburg culture No. 1 of Tub. Bac. dried in vacuum intravenously.

\*\* Animals No. 218, 222, 298 and 308, as well as control animal No. 282, were selected from a group of 20 cattle after a careful clinical examination and tuberculin test. They proved to be clinically free from tuberculosis and showed no reaction to tuberculin.

test to which they were subjected on Dec. 11, 1903, and Aug. 25, 1904, while animals No. 384 and 395 showed about the same reaction on Aug. 25, 1904, as at the preceding test. On Aug. 31, 1904, animals No. 366 and 384 were slaughtered, and found to be affected with generalized tuberculosis. Animal No. 395 is alive to-day and proves clinically sound. Animals No. 218 and 222 also showed no reaction upon being subjected to another tuberculin test in Aug., 1905. Both animals also calved in a normal manner. These calves, raised directly from their respective mothers' udders, without being subjected to protective inoculation, will be further observed as to their resistance towards natural infection, along with those calves out of the more highly immunized cows, Nos. 298 and 308, which have not yet been tested as to their immunity by artificial infection. Together with these calves we placed, under comparable conditions, calves from less highly immunized cows, as well as calves which were not vaccinated, and such coming from non-vaccinated dams, into stables known to be infected with tuberculosis. About the condition of these calves nothing can be reported for the present, except that they appear quite healthy. In regard to the control animal No. 282 might be added, that it is still living, but shows clinical symptoms of tuberculosis, in addition to its sensitiveness to tuberculin.

#### IV.

Further was I in a position to make several post-mortem examinations. All of these examinations were made in the presence and under the directions of approved Government veterinarians; especial assistance was given me by Veterinarian Josef Kreika, who is now performing the bovovaccinations on the Estate, as well as Government Veterinarians Meszaros and Torma.

1. Animal No. 273 (Protocol No. 16) was immunized on September 27 and November 27, 1902. At the end of 5 months it was killed and found to be perfectly normal. This purpose of killing this animal was primarily to prove the absolute harmlessness of this vaccination process.



2. Animal No. 19 (Protocol No. 117) was protectively vaccinated on June 10, 1903, and was dissected 2 years after the last inoculation; it also was absolutely free from tuberculosis.

3. Animal No. 516 (Protocol 107) was submitted to bovo-vaccination on May 29 and July 25, 1903. It reacted upon the second inoculation with a decided fever, exhibited labored breathing and a distinct tumefaction of the submaxillary glands. For this reason it was considered infected with tuberculosis already at the time of this the second vaccination. It was killed  $3\frac{1}{2}$  months later. Upon post-mortem examination the bronchial glands as well as most of the body glands were found to be tubercular. These findings proved the conclusions previously deduced from the reaction following upon the second inoculation, and from the clinical examination, that a more or less advanced infection had existed before the protective inoculation had been administered.

4. Animal No. 390 (Protocol 39) raised directly from cow's udder was submitted at the age of four months (March 18, 1903,) to the first vaccination. It reacted so strongly to this first inoculation, that it was looked upon as already infected with tuberculosis and excluded from the second inoculation. This animal also reacted strongly upon a tuberculin test to which it was submitted on September 11, 1903. Upon a renewed tuberculin test on March 8, 1904, it showed no reaction, neither did any clinical symptoms of tuberculosis present themselves. The animal was sold as a feeder, and taken to Munich, where upon slaughter, it was subjected to a minute post-mortem examination by Veterinary Inspector Moelter. According to Veterinarian Moelter's report, this animal proved to be perfectly healthy and free from tuberculosis.

5. Animal No. 741 (Protocol No. 300) was submitted on August 26, 1904, at the age of 2 months to the first vaccination, and on November 18, 1904, to the second vaccination. This animal showed a very strong reaction (high fever, labored breathing, etc.), to both inoculations. However, in July, 1905, it did not react to a tuberculin test. On September 1, 1905, it

was killed in the presence of Dr. Römer, of Marburg, and Government Veterinarian Torma, of Babolna. The minute dissection of this animal (also witnessed by Veterinarian Kreika) resulted after a most careful examination of all the organs, in the finding of only two small, lentil-sized nodules in the left lung. These showed themselves to be isolated from the surrounding lung tissue by a dense capsule and could be removed without injury to the lung tissue. The contents of these nodules consisted of a crumbling, cheesy material, in which no tubercle bacilli, either in smear or section preparations, could be demonstrated. The inoculation test upon animals could unfortunately not be made. Both of the nodules gave the decided impression of a healed and closed process, which can be looked upon as corroborated by the negative results to the tuberculin test.

On account of the absolute harmlessness of the procedure, as well as in view of the good results obtained in the foregoing experiments, a systematic protective inoculation has since been carried on in the cattle on the Estates in Sarvar and vicinity. All well-developed calves, therefore, were submitted at the age of from 2-3 weeks to the first protective inoculation, and after three months to the second inoculation, according to von Behring's method. In the beginning, when this method was first applied, several animals were inoculated at an age more advanced than at present prescribed by the Marburg Institute; in such animals we have frequently observed, that a marked elevation of temperature, in some cases even a cough, and sometimes even swelling of the superficial lymphatic glands, presented themselves. In some cases these reactions could, with certainty, be traced back, through clinical examinations made at the time, to a tubercular infection existing at the time of the inoculation. We subjected also these evidently infected animals to protective inoculation, for the purpose of ascertaining what influence von Behring's method would have on the future condition of such already infected animals; therefore, to enable us to make observations, whether any curative properties could be attributed to this protective inoculation. Of the total ani-



mals inoculated, 62 head were calves, which were suspected of being affected with tuberculosis already at the time of the vaccination. Of these 62 animals, 13 head (21%) reacted to a tuberculin test made in August, 1905, while the remaining 49 head showed no reaction and turned out to be also clinically absolutely healthy.

The post-mortem appearances of three animals of this series (Nos. 516, 390 and 741), which are in many respects especially interesting, have been described above.

The results of the dissection of animals No. 390 and 741, as well as the fact, that 49 out of 62 calves, which were already at the first vaccination designated as suspicious of being affected with tuberculosis and which do not react to tuberculin at the present time, substantiates the correctness of the assumption, that, in cases where an infection is in progress, the question of the curative effect of protective inoculation does come into play. To what extent protective inoculation is destined to be of utility in this direction, *i. e.*, how far natural infection can have progressed and the vaccination still have a favorable checking influence upon it, must be left to further researching. For further details regarding this group, see Table No. 3.)

Irrespective of the 13 animals which reacted to tuberculin and which belong to that cattle group which reacted strongly to the protective inoculation and for that reason were suspected already from the beginning as tuberculous, only 9 head (1 ½%) out of 590 animals vaccinated, reacted upon a tuberculin test made in August, 1905. But it is to be noted, that 4 of these 9 animals (Nos. 428, 577, 576 and 252) had been tested before one year had elapsed since the administration of the protective inoculation; we must here, therefore, take into account the possibility of a hypersensitiveness to tuberculin, having been produced wholly by the protective inoculation. (See Table No. 4.)

When it is considered, that before the introduction of protective inoculation, an average of 50 per cent. of cattle, of about the same age as our vaccinated animals (the percentage was higher

for the older animals), reacted to tuberculin, and when it is further pointed out, that our vaccinated animals moreover were not subjected to the slightest isolation, or other hygienic protective measures, but were placed without consideration, wherever immediate needs demanded it, then it would appear to me not unjustified to draw the conclusion, that the von Behring method of protective inoculations is to be regarded, as far as the problem of a rational procedure for the extermination of tuberculosis in cattle is concerned, as solved.

SARVAR, September 24, 1905.

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"I CANNOT refrain from congratulating you upon the success of the REVIEW, as without doubt it is one of the best veterinary periodicals published."—(*Adolph Eichhorn, D. V. S., Bureau of Animal Industry, Great Bend, Kansas.*)

THE FUNERAL OF A VETERINARIAN IN RUSSIA.—October 31st of last year, on which day the Ukase of the Czar, granting liberal reforms to the people of Russia, was published, during a demonstration in Moscow, Bowmann, a veterinarian, was shot and killed. He enjoyed, among the poorer class of people, great popularity, due to his kindness towards them, and also to his activity in the work of securing the reforms. After his death his fellow citizens arranged a funeral, to which a similar never was seen in Moscow, more than 300,000 people, with 300 flags, and thousands of wreaths, followed the coffin.—(A. E.)

DR. PEARSON ON THE VIII<sup>TH</sup> INTERNATIONAL VETERINARY CONGRESS.—At the January meeting of the Veterinary Medical Association of New York County, Dr. Leonard Pearson, of Philadelphia, addressed the members on the subject of the VIII<sup>th</sup> International Veterinary Congress, describing the *personnel* of the great gathering, the wonderful preparations and decorations in their honor, and the princely entertainments extended by everybody, from the nobility down. He then very clearly and most entertainingly went over the scientific programme of the Congress, explaining the methods adopted in presenting and publishing the papers, and gave the substance and conclusions of some of the more important measures considered. The members of the County Association were very grateful to Dr. Pearson for his kindness, and unanimously elected him to honorary membership.

## THE VETERINARIAN IN CONNECTICUT: HIS ATTAINMENTS AND HIS POSSIBILITIES.

BY RICHARD P. LYMAN, HARTFORD, CONN.

Presented to the Annual Meeting of the Connecticut Veterinary Medical Association,  
Feb. 6, 1906.

It is presumed to be the accepted idea when preparing a paper to present before a gathering of this character that the essayist shall select for his subject a topic relative to some special investigations upon a specific disease or class of diseases. Assuming that a deviation from this custom will not grossly infringe upon your good nature, and trusting that I may offer a few thoughts and suggestions that may be of sufficient importance to be of material interest and appeal to the sensibilities of my hearers, I desire to address a few remarks to you bearing upon "The Veterinarian in Connecticut: His Attainments and His Possibilities."

It is not pertinent or necessary nor shall I attempt to detain you by looking back upon the past and presume to picture to you the early history of the practitioner of this State. Suffice it to say that we have had and continue to retain in our ranks many efficient, loyal and scientifically qualified men ever working with an eye for the upbuilding and recognition of our calling.

True it is that the commercial nature of our business has forced the qualified man to labor at times hand in hand with the empiric; the latter more often than not an illiterate, uneducated and an unscrupulous individual having no professional knowledge either of the ethics or of the value of his services; trusting entirely upon a large amount of self esteem and experience, without any ambition or ability for social recognition. That man always was, is, and always will be the "horse doctor" and his mere existence, with the advantages he may have derived by being, as a class, first in the field has caused the unappreciative public to look upon all alike and relegate the profession as a whole to a class that has long been holding forth anything but

inviting opportunities for the young man anxious for a professional career.

Slow as the change has been it is indeed a fact that the veterinarian with the education is now obtaining the position that certainly should be his due, pushing the empiric gradually to the rear. The public are beginning to appreciate us professionally, as witnessed by our recognition in recent legislative efforts.

To-day we are rising well towards an elevation long sought and the large gatherings at the meetings of this State Association during the past year or two omens well for healthy professional activity. With this elevation attained or in sight it is our duty to direct, foster and protect the interests of the individual, the profession, and also the live stock owner so dependent upon our advice and direction. Let us do this with a zeal which aims at individual and professional advancement and which increases the science of veterinary medicine in its value to humanity.

Every veterinary surgeon should keep himself, as far as his financial opportunities will permit, abreast with the advances that pertain to the treatment, care and sanitary control of the health of live stock; doing so by a constant study of current literature, subscribing for at least one reliable and up-to-date veterinary periodical, by means of affiliation with veterinary associations, both State and national, and other scientific bodies wherever such is possible. The man that ostracizes himself from his fellow practitioners and who fails to avail himself of the opportunities of to-day works not for the elevation and love of his chosen calling but rather for sordid gain.

We should have more than a professional interest in the immediate case in hand and should endeavor to place ourselves in touch with the interests of the individual and the community. It is our duty to so familiarize ourselves with the details of our work, that, if occasion requires, and let us make the opportunity if others fail to make it for us, we may explain to the public the important economic relation that these animals upon which we offer our professional skill, have in the welfare of the



community, State and nation ; to show how essential is the animal industry to all other industries, how necessary is the preservation of the health of these animals, both from a financial and humanitarian standpoint, as well as how important is a clean knowledge of animal diseases in the daily life of man. That such opportunities do come to the veterinarian it cannot be denied and the importance of this point can well be exemplified by reviewing the history of those recently reported outbreaks of rabies in sections of this State. I cannot occupy your time detailing the history of those outbreaks, but can most emphatically say that therein arose an opportunity for the veterinary surgeon to apply his superior knowledge and use his influence to quell the excitement and council moderate measures against those of wholesale destruction that were pursued and which absolutely destroyed all possible means of arriving at a rapid diagnosis and cannot but inflict human hardship, besides hindering the suppression of a disease that can be controlled and checked by modern, cool and common sense methods.

Having secured legislation that protects the veterinarian, the public, and guarantees to a greater or less degree the responsibility of the practitioner, we must recognize that this State has given us voice and it is now our duty and we should aim to use this advantage by attempting to educate its citizens along such lines as will best safeguard the public health as well as increase the individual wealth by showing them the advantages to be derived by the introduction of measures that will best decrease the animal mortality, and best control diseases communicable from animal to animal and from animal to mankind.

True it is that the public has long harbored the one thought—a veterinarian may be very clever in treating animal diseases, but when it comes to business or politics he is absolutely ignorant—they never think of looking to the field of veterinary science for a man to do other than doctor. While I am not urging you to become politicians, I do say we have it in us and we must contradict this and show by our superior knowledge that we are alive to the advantages that could be derived by the



establishment of, if you will, a State bureau of animal industry under the leadership of a qualified veterinary surgeon, a man competent to recognize and with the ability to promulgate acceptable measures to eradicate diseases of infectious and contagious nature—a man, in short, who will every day of his tenure of office be a means of preventing much of the annual losses from the animal diseases and who may be an aid in lessening the dangers of animal diseases communicable to man.

Although I have here endeavored to point out the broad field, opportunities and duties we have before us, asking each and every veterinarian within the State to use his efforts for professional elevation and for the betterment of those laws pertaining to our domestic animals, I am not insensible to the admirable administrative ability of the present incumbent of the chair that pertains to the health of animals, indeed an honorary member of this body. I am not ignorant of his conscientious discharge of the duties pertaining to his position; but, I am sensible of the inefficiency of our laws relative to all animal plagues under which he directs his work.

I am confident that it is our duty to show that new and more efficient laws should be enacted, and I am of the opinion that the present incumbent will bear me out in this and in the belief that much could be saved to this State financially were such placed upon the statutes. With our knowledge and this belief in mind is it not our opportunity to show our hand and the public what constitutes the veterinarian and his profession?

I cannot attempt to continue and describe to you all the fields open and the opportunities that I believe are available for us to show our worth and knowledge; for, were I to attempt to elaborate on the advantages the public would gain by efforts on our part to render more efficient the handling of milk or the proper inspection of meat, I could not do justice to our advantages and opportunities without occupying too much of your time.

The importance of the wholesome production of milk in relation to infant and invalid feeding, the wisdom of enactment

and the needs of enforcing suitable laws pertaining to "bob" veal and healthy meats as well as the veterinarian in relation to both local and State boards of health, are indeed subjects worthy our consideration. They open a field of opportunity for us to show the importance of our position in relation to the public economy and in connection with the welfare of the State. As with other matters, let us give them our attention, lead, not follow, and use to advantage our knowledge of comparative medicine. Withal, while striving for personal and professional elevation, let us keep in mind the ethics of professionalism, keep our standard high and strive for a career that will make us invaluable to a community, ever remembering that we alone can elevate and dignify the calling of a veterinarian.

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THE name of the Iowa State Veterinary Medical Association was at the recent annual meeting changed to that of the Iowa Veterinary Association.

A RESOLUTION was recently adopted by the Minnesota State Dairymen's Association endorsing the work of the State Live Stock Sanitary Board, as being "prompt, economical and thorough, considering the appropriation," and calling upon the legislature for more generous support for the work of the Board. Minnesota has an almost ideal organization for doing live stock sanitary work.

WE received the following announcement on February 13: "Mr. and Mrs. James Morgan Gardner announce the marriage of their daughter, Violet Gardner Kissick, to Dr. Thomas Edward Robinson, on Monday, the twelfth of February, one thousand nine hundred and six, Brooklyn, New York." We suspect that this is the genial Secretary of the Rhode Island Veterinary Medical Association, and extend our warmest congratulations.

"TEXAS FEVER, with Methods for Its Prevention," is the title of Bulletin No. 78 of the Bureau of Animal Industry. It was prepared by Dr. John R. Mohler, Chief of the Pathological Division, and after giving a history of the disease, an illustrated sketch of the life-history of the tick, with the various kinds of harmless ticks, goes exhaustively into the subject of prevention, including instructions to free cattle of ticks, to free pastures of ticks, and to free cattle and pastures at the same time. Other phases of the subject are well treated of.

## EXPERIENCE IN THE TREATMENT OF COUGHS AND RESPIRATORY DISORDERS OF HORSES, CATTLE AND SHEEP.

BY A. S. ALEXANDER, F.H.A.S., M.D.C.,

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Like the many cases of "mysterious" lameness one is called upon to treat in general practice, chronic coughs frequently prove tediously distressing to both patient and practitioner, and every possible combination of drugs is employed—often ineffectively—in the attempt to allay the misery of the animal and complaints of the owner.

Such was the writer's experience for many a year before Glyco-Heroin (Smith) was offered to the profession and proved a panacea for many of the woes we have indicated. One could usually attribute the hacking, strangling, croupy or resonant cough to its correct cause, but to hit upon an effective remedy was the trouble. The old-fashioned electuary was called into service and failing was usually followed by solutions containing astringents, antiseptics, stimulants, expectorants and anodynes. There was simply no specific, although each practitioner had his favorite cough medicine or paste, and under the circumstances, it was not to be wondered at that Glyco-Heroin (Smith) became immediately popular with the veterinarian when he found it promptly effective where his own medicaments had failed.

Our first experience with this admirable combination of heroin, palatable expectorants, antispasmodics and balsams, was in the case of a valuable driving horse that had suffered from an acute spasmodic cough for two or more years. Everything possible had been tried by different veterinarians, most of whom had also examined the teeth and practiced thereon, but without avail. So sudden and acute was the cough after each meal that the walls of the box-stall were found plastered with partially masticated oats and the owner and his coachman had about concluded that the trouble was incurable, when Glyco-

Heroin (Smith) was heard of and given a trial. Two ounces were given three times daily before feeding and had an immediate effect, whereupon the dose was reduced to one and a half ounces, and then to one ounce, resulting in a complete recovery within two weeks from commencement of the treatment.

While this is the most striking experience of the sort we have in mind, many very similar ones might be quoted, and so thoroughly were we convinced of the typical effectiveness of Glyco-Heroin in chronic laryngeal coughs, that we have since prescribed it invariably and with marvellous success for troubles of this nature, and have come to regard it as equally valuable for coughs following influenza and adding to the distress of laryngitis, bronchitis, pleurisy and pneumonia. It was also most successfully employed during the prevalence of broncho-laryngitis as an epidemic among horses in Chicago a few years ago.

With these experiences of the efficacy of Glyco-Heroin in mind, that remedy was naturally the first one thought of by the writer when it became his duty to prescribe for the pulmonary ailments and coughs of show sheep at the Wisconsin Agricultural Experiment Station. Few practitioners comparatively are called upon to treat sheep, and for this reason, most of them would doubtless be at a loss to know what to administer for coughs, which are very prevalent among these animals, and for the train of pulmonary disorders giving rise to cough. Such was our experience at first, so beautifully did Glyco-Heroin rescue us from our predicament that we feel justified in bringing the matter to the attention of the profession.

Following the International Live Stock Exposition of 1903, some of the Station sheep—winners of champion and class prizes at that show—arrived home sick, breathing hard, coughing, discharging from the nostrils, fevered, lacking appetite, costive, and in short showing every symptom of "cold" with its various complications. Every case was at once treated with Glyco-Heroin and all recovered with the exception of one fat wether that was too far gone at the start and on post-mortem



examination found to be afflicted with double pneumonia. For adult sheep, half an ounce two to three times a day was prescribed. Lambs were treated with one to two drachms two or three times daily.

The fact that Glyco-Heroin (Smith) may be used with confidence for coughs and pulmonary disorders of cattle will, however, be of much more importance to the general practitioner than to know that it has proved effective for sheep. Recently we have had a pleasing experience with this preparation for cattle at the International Live Stock Exposition, where the writer has four years served as official veterinarian. A very valuable Shorthorn bull came to the Show affected with chronic laryngitis and due to exposure on the journey, suffered an aggravation of the ailment, which gave rise to stertorous breathing, in addition to other ordinary symptoms and loss of appetite. The owner was fearful that powerful medicines might so depress the animal that its chances of success in the arena would be lessened, but in fourteen hours after treatment was commenced the bull went into the ring, breathing normally, and went out of it wearing the blue ribbon of victory. The treatment prescribed was two ounces of Glyco-Heroin every three hours until symptoms abated, then two ounces every four hours, and finally one ounce three times daily. So effective was the remedy in this case that during the entire week of the Show, the animal was comfortable, showed no abnormality in breathing and regained its normal appetite, to the great satisfaction of the owner.

Like success was had in treating a Shorthorn heifer at the same Show. She was taken down with a congestive chill and when treated with Glyco-Heroin made a speedy and complete recovery so that she was successful in the show-yard.

Having had such happy experiences with Glyco-Heroin (Smith) we feel justified in thus setting forth the facts that practitioners who have not yet used the remedy may be led to give it a place in their pharmacies and medicine cases and prescribe it with confidence for the class of ailments we have outlined.



## THE FIGHT AGAINST TEXAS FEVER.

A REVIEW OF THE WORK BEING ATTEMPTED IN THE SOUTH  
FOR THE CONTROL AND ERADICATION  
OF THE DISEASE.

BY D. ARTHUR HUGHES, PH. D., D. V. M., CORNELL UNIVERSITY.

The losses to the South from the presence of Texas fever, beyond the shadow of a doubt, aggregate several millions of dollars a year. The truth of this statement can be approached by looking at the facts from several points of view: The losses from sickness and death of Northern cattle passing to the South; the losses from sickness and death among native cattle in the South; the losses in market prices from the presence of the disease in the South; the losses in beef and dairy production, in manures and fertilizers.

Not until very recent years have the preventive measures whereby the losses can be greatly reduced in cattle coming from the North, become known to Southern stockmen. Nor even yet are these preventive measures very well known, so that Southern breeders still suffer discouraging losses in cattle brought to the South to grade up the herds. Before the etiology of Texas fever and means of prevention became known, as high as 50 to 90 per cent. of such cattle died.\* Even now, in many cases, as high as 60 to 75 per cent. are sometimes lost.† The annual losses from sickness and death from Texas fever among Southern natives is enormous. Most of the experiment station veterinarians or dairymen in the Southern States, from whom advice is sought by owners in the respective States in cases of disease among cattle, report that the bulk of the deaths are caused by this disease. Willoughby, of Georgia, says: "While the losses on imported cattle have been very great, yet the losses from the same source among susceptible native cattle

\* See Salmon, Annual Report B. A. I., 1898, 1899.

† Ga. Exp. Stat. Bull., 64. P. 145, §3.

Report Dept. Agri. of N. C., Apr., 1904. P. 3, §3.

have been very much greater." Thousands die annually, he says, either from gross infestation of ticks or from moving cattle from uninfested Southern regions to localities infested with ticks.\* Similar testimony is borne by Dawson, of Florida,† Butler, of North Carolina.‡ "Scarcely a month passes through the spring and summer, when we are not called upon to treat, either personally or by letter, cases of Texas fever in native (Southern) cattle,"§ says J. C. Robert, of Mississippi.

But the losses from the embargo against Southern cattle in the Northern markets, caused by the U. S. Government Texas fever quarantine, and the consequent depreciation in prices of Southern stock, add greatly to the annual loss sustained by the South. Southern cattle usually bring from one-half to one cent per pound lower than the price paid for Northern or Western cattle of the same grade, in all the important live stock markets and packing centres of the North.|| Butler has estimated that, at one-half cent a pound, the loss for one year, to the single State of North Carolina, due to depreciation of market values, would be \$212,000, or more than enough to exterminate the tick in the State¶. When we remember that millions of Southern cattle per annum are forced to be sold for immediate slaughter at the great trade centres of the North, we can thus readily see that the loss from this source alone is millions of dollars annually.

Furthermore, we should not forget that ticks are external parasites; that they commonly cover the softer parts of the bodies of the cattle in the affected regions for the greater part of the warm season; and that the depletion of the animals from loss of blood extracted by the ticks constitute a draught upon the system which tells terribly in loss of weight, retarded

\* Ga. Exp. Stat. Bull. No. 64. P. 146, §4.

† Fla. Exp. Stat. Bull. No. 64. P. 534, §1.

‡ Report on The Cattle Fever Tick. Apr., 1905. P. 3, §3.

§ Miss. Exp. Stat. Bull. No. 69. P. 8, §1.

|| Ga. Exp. Stat. Bull. 64. P. 146, §1.

¶ Report N. C. Dept. of Agri. Apr., 1905. P. 9, §4.

growth, and that in spite of rich nutriment. Not only this, but the losses in fattening and milk-giving qualities from the blood sucking are well known to stockmen.\* That the animals may bear up under the blood thirsty ticks the Southerner must feed concentrates heavily, or other by-products of the South's staple crops.† To the losses from the blood thirstiness of the ticks with the consequent unthriftiness of the cattle, must be added the inability of the South to obtain manures in sufficient quantities for fertilizing the large territories. The comparative scarcity of farm animals in the South, as Cary has pointed out,‡ lessens the supply of manurial fertilizers, solid and liquid, which are cheaper and more valuable than commercial fertilizers. The risks from Texas fever and the deaths from it have largely to do with this state of things.

We will now have little difficulty in forming a gross estimate of the losses to the South from Texas fever. Willoughby, for Georgia, season 1904, places the loss at 3 to 5 per cent. of the total valuation of the cattle of the State, or \$400,000 to \$600,000.§ If, however, we turn to the table of the Bureau of Statistics of the Department of Agriculture for the year ended March 31, 1905, we find that deaths from all causes of Southern cattle reached 1,159,784.|| As the scientific men of the South tell us the majority of deaths are from Texas fever, we may safely take the death rate from the disease at fifty per cent. of the total. At twenty dollars a head this makes the losses from Texas fever, by deaths, \$11,597,840 for the statistical year closing March 31, 1905. The losses to the South from depreciation of market value of their cattle could be obtained, and it would amount to as much more. When the financial losses through serious illness of cattle from the disease, losses from the preda-

\* La. Exp. Stat. Bull. 84, Pp. 22-23, particularly P. 23, § 4.

La. Exp. Stat. Bull. 82, Pp. 3, § 3.

† La. Exp. Stat. Bull. 82, P. 6, § 1.

Tenn. Exp. Stat. Bull. Vol. XVIII. No. 1, P. 3.

‡ Fla. Exp. Stat. Bull. No. 116, P. 231, § 2, P. 232, § 1.

§ Ga. Exp. Stat. Bull. 64. P. 145, § 1.

|| See 21st Annual Report, B. A. I., Dept. of Agri. P. 508.

tory habit of the ticks, the irritation of the bites, the necessity for high feeding are added, we have of necessity a large budget to charge to Texas fever. Without a doubt it is a curse to the Southern cattle industry. In March of last year, according to Federal statistics,\* there were 15,354,499 cattle in the South, mostly in Texas, valued at \$190,735,929. If Texas fever were eradicated and the Southern cattle were freely improved by mixture with the best blood of the North there should be twice as many cattle at a far greater value per head. To Texas fever must be charged the backwardness of the industry.

With this appreciation of the losses in mind, we may proceed to review the work being attempted in the South for the control and eradication of the disease. In doing so we will hold closely to the facts as they are presented in the Federal documents and in the documents of the departments of agriculture of the several States. If we mistake not, there is commonly an inappreciation of the work being done to combat the disease. First, we will discuss the methods for controlling the disease which have been tried. Under which we will speak: of immunization by blood inoculation followed by gradual tick infestation; of gradual tick infestation without blood inoculation; of serum inoculation; of dips and dipping. Second, we may treat of the methods which are being tried, or are proposed, to extirpate the disease. Under which we will speak: of the tick-free parts of the South; of the feasibility of extermination of the tick; of the methods which are applicable; of the duty of extermination; closing with a list of papers, published in the South, accessible to all.

#### I. THE METHODS FOR CONTROLLING THE DISEASE WHICH HAVE BEEN TRIED.

The first method to be spoken of, and by all odds the best developed and most widely used in the South, is that of immunization by blood inoculation followed by gradual tick infestation.

\* See 21st Annual Report, B. A. I., Dept. of Agri. Pp. 506-507.



1. *Immunization by blood inoculation followed by gradual tick infestation.*

In the discussion, which is to follow, it should never be forgotten that the investigators of the Bureau of Animal Industry were the first to suggest this method for the control of Texas fever. They were the first to suggest not only the value of dipping to destroy the ticks, the possibilities for prevention which might be found in serum inoculation, they were also the first to suggest the probability of some method of blood inoculation being developed as a preventive measure. Smith and Kilborne in the famous monograph on the nature, cause and prevention of Texas, or Southern cattle fever, said the attack induced in the artificial way by hypodermic injection of blood from immune Southern cattle "was not so fatal as the natural disease." They also suggested that by further experimentation a practical method of experimental inoculation might be perfected.\* This was in the year 1893, before any work of the kind had been undertaken away from Washington. Furthermore, the Bureau of Animal Industry was also the first to start experiments to this end, namely prevention through blood inoculation. In Oct., 1895, Moore and Schroeder, working in co-operation with Cooper Curtice, tried experiments in the inoculation of blood from immune Southern natives into susceptible Northern cattle with the result that, when these cattle were sent South, they proved immune.† Not only was the discovery of the tick announced in 1893 by the Federal investigators, but the discovery of immunization by blood inoculation as well. The latter was followed up by further experimentation at Washington in 1895 to 1899. About 1896 or 1897, the method began to be recognized as valuable and was developed

\* Connaway, Mo. Exp. Stat. Bull. 48 (Oct. 1899), P. 18.

Smith and Kilborne, Bull 1, Bureau of Animal Indust. U. S. Depart. Agri.

See also :

La. Agri. Exp. Stat. Bull 84, P. 4. § 5.

S. C. Exp. Stat. Bull. 90, P. 6.

† Fifteenth annual report B. A. I., 1898, Pp., 272-288.

Sixteenth annual report, Pp 43-52.



by Connaway and Francis. Shortly it came to be used throughout the South.

Be that as it may, to the South is to be given the credit of having developed the method and of having carried it to a successful issue. We may therefore glean all the facts relating to the method, and set down the knowledge gained from ten years experience with it in all the Southern States. I propose, therefore, to treat topically the following: The development of the method of inoculation by Connaway and Francis; its extensive use in the South; the meaning of immunity as applied in blood inoculation; a simple explanation of the method of inoculation, age and weight of animals best fit for inoculation; the season of the year; the diet; the dose of blood; the source of the blood; some points in the pathology of the disease; on what recovery and maintenance of immunity depend; the peculiarity of the blood of the animal after recovery; how to prevent fatalities and relapses; bad effects of inoculation; effects on reproduction; successes with inoculation at the State experiment stations.

*Development of the method of inoculation by Connaway and Francis.*—Dr. J. W. Connaway, of the University of Missouri, in 1896 proposed to inoculate Northern high-bred cattle subcutaneously with blood drawn from an immune Southern native, to care for the cattle during the inoculation fever, and then ship them to Texas to be cared for by Dr. M. Francis, of the Texas State Experiment Station, during the period of early infestation with ticks. Up to 1899 the losses in 400 cattle thus treated was only 8 per cent. from inoculation or subsequent exposure.\* They demonstrated the commercial value of the method; in spite of long journey the cattle had to make, and fatigue; in spite of the different climatic conditions the cattle met.†

*The method extensively used in the South.*—The method developed by these two zealous veterinarians (Connaway and

\* Mo. Exp. Stat. Bull. 48. P. 1-4.

† Mo. Exp. Stat. Bull. 48. P. 19.

Francis) has become extensively used throughout the South. Francis continued the method in Texas.\* Since 1897 the work has been continued in Louisiana, Mississippi, Alabama, Georgia, Florida, North and South Carolina.†

*The meaning of the term immunity as applied in blood inoculation.*—The term immunity has a different meaning to its ordinary use as applied in serum therapy, when we speak of immunity to Texas fever by inoculation of a susceptible animal with infected blood from a Southern native. The difference is this, that, inoculation with infected blood, after recovery from the effects of the inoculation fever (which is genuine Texas fever) the animal does not lose the microbe, but continues to harbor it to a limited extent, yet in such a form that the blood of the animal, which has recovered from the inoculation is dangerous, if it, in its turn, were injected into another susceptible animal.‡

From the Southern commercial point of view, the object is to ship high-bred Northern animals South under the strictest precautions that they get no ticks on them during the entire journey, land them at their point of destination tick-free, place them in tick-free fields or barns, inject them subcutaneously with 1 to 3 c. c. of blood from Southern immune, pass them through a mild form of the fever and so impart a tolerance to the disease. However, this tolerance is temporary and is soon lost. Hence shortly after the acquirement of the temporary tolerance small amounts of ticks must be allowed on the animals; then, gradually, gross infestation. Even after gross infestation has once been allowed, complete life-long immunity, in the sense ordinarily used in serum therapy, cannot be said to be established; for tick infestation must be allowed year by year or tolerance is sooner or later lost.§

\* Tex. Exp. Stat. Bull. 63. This gives the work done until 1902.

† See Fla. Exp. Stat. Bull. 64. P. 542, §2.

La. Exp. Stat. Bull. 84. Pp. 12-15.

‡ See Dr. Law, "Immunization: its field and its limitations." AMER. VET. REV., Dec., 1904. P. 830, §2.

§ La. Bull. 84. Pp. 2122, §4.

S. C. Bull. 90. P. 6, §1.

Ga. Bull. 64. P. 155, §1-3.

Tex. Bull. 63. P. 3-5.

Ala. Bull. 116. P. 247, §3-4.

*Explanation of the method of inoculation.*—This need not detain the scientific reader long. Keeping in mind the above facts, we must remember that the method of inoculation is simply to inject subcutaneously, under aseptic precautions, usually 1 c.c. of the fresh, warm, defibrinated blood drawn from the jugular of an immune Southern native into a susceptible animal. A mild Texas fever, called inoculation fever, will ensue, afterwards a temporary tolerance to the disease.\*

*Age and weight of animals to be inoculated.*—The animals to choose for inoculation, to have the best results, should be strong, healthy, weaned calves, eight to twelve months old, and weighing 500 lbs. to 800 lbs.†

*Place and season of the year.*—In the North inoculations may be made at any time as no ticks can get on the animals there. In the South the inoculations should be made in late fall or early winter. The point to be remembered is that, whether the calves are inoculated in the North or the South, they must not be allowed to be grossly infested with ticks (*boöphilus annulatus*) shortly after the inoculation fever. There must be a mild infestation; later, a gross infestation. The time to choose for inoculation is when the animals will not suffer from extremes of temperature.‡

*Diet.*—During the inoculation fever an attention to the diet is of the utmost importance. This should be of such a kind, and be given in such quantities, that it will neither scour the animal nor increase the constipation apt to be attendant upon the fever; at the same time which will be highly nutritious during inoculation-period illness and convalescence. In the North,

\* Ga. Bull. 64 Pp. 160-165.

Va. Bull., Sept., 1899. Pp. 173-174.

La. Bull. 84. Pp. 17-21.

† Mo. Bull. 48. P. 60, §1.

Tex. Bull. 63. P. 4, §2-5.

S. C. Bull. 90. P. 3, §5.

‡ Mo. Bull. 48. P. 61-62.

Tex. Bull. 63. P. 4, §1.

S. C. Bull. 90. P. 7, §3.

Miss. Bull. 69 Pp. 13-14.

Fla. Bull. 64. Pp. 542-543.

Ala. Bull. 116. Pp. 251-252.

S. C. Bull. 90. P. 7, §2.

Ga. Bull. 64. P. 157, §2.

La. Bull. 82. P. 7, §6-7.

S. C. Bull. 90. P. 22, §1.

Ga. Bull. 64. P. 159, §3.

Ala. Bull. 116. P. 253, §2.

S. C. Bull. (Apr., 1904.) P. 21, §3.

therefore, the feed may be oats, bran, part of the time crushed corn, linseed meal and clover hay. In the South it may be green oats or wheat or prickly pear (with the prickles removed) to keep the bowels free, equal parts of bran, oats, corn chops and perhaps a very little cotton-seed meal; or a grain ration may be given consisting of corn, wheat bran, rice meal or oats, about three-quarters of a pound a day for each hundred pounds of the animal. In this case the rough fodder should be either hay, shredded corn, stover or ensilage. At the times when the calves refuse all other food, separator skim milk will pass them through the inoculation period. The animals should have free access to water at all times.\*

*Dose of blood.*—The amount of blood to be injected depends upon three things: the virulence of the blood to be injected, the age of the animal to be injected, his weight and condition. If the blood is from an animal thoroughly, completely (grossly) infested with ticks the amount injected should be very small, as such blood is very virulent; if the animal is hardly past his suckling period the amount of blood should be small in any case; if the animal is above 900 or 1000 pounds he will stand a larger dose. The standard dose is 1 c.c. It is better to begin with small amounts and inoculate a second time if there are no results, *e. g.*, January for the first inoculation, March for the second.†

*Source of blood for inoculation.*—The source of blood for inoculation may have any one of three origins: from an immunized Northern animal, from a native Southern immune; from the engorged female tick. In case it is from either a Northern immunized bovine or a Southern immune, the things to be kept in mind are: that the animal had best be two years, or over, of

\* Mo. Bull. 48. P. 61, §3.

Tex. Bull. 63. P. 3, §5.

Tex. Bull. 63. P. 6, §1-4.

† Mo. 48. P. 61, §2.

Tex. 63. P. 5, §6

S. C. Bull. 90. P. 3, §1.

S. C. Bull. 90. P. 14, §2.

S. C. Bull. 90. Pp. 10-11.

Ga. Bull. 64. P. 158, §4-5.

Ala. Bull. 116. P. 262, §1.

Ga. Bull. 64. P. 157, §2.

Fla. Press Bull. No. 38. P. 1, §3. P. 2, §2.

Va. Bull. 104. P. 170, §2.

La. Bull. 82. P. 7, §3.

age, carrying ticks, or known to have carried ticks the preceding summer; that the drawn blood, after defibrination, must be immediately injected, as septic conditions in this blood soon begin and no antiseptic can prevent it without at the same time destroying the microparasite; that there is great variety in the virulence of the blood and experiment is the only way to discover its immunizing quality. In case the origin of blood is from an engorged female tick the advantages are three: the blood is just as effective as that from the jugular of an immunized animal; it produces a milder infection; the engorged female tick may be sent to a distant point and the blood from the tick injected after the lapse of hours or days.\*

*Some points in the pathology of the disease.*—The most important feature, consequent upon inoculation, is (1) the primary and secondary fevers, which is an indication of the main pathological change in the animal which is (2) the destruction of the red corpuscles by the microparasite.

The primary fever begins from the sixth to the twelfth day after inoculation. The temperature may run from  $104^{\circ}$  to  $106^{\circ}$ , the mean temperature being  $104^{\circ}$  F. The temperature will depend upon the virulence of the injected blood, the age, condition and care of the animals injected. The primary fever remains for seven to eight days then falls suddenly to normal  $102^{\circ}$  F. The sudden fall of the primary fever is the danger period.† The secondary fever begins anywhere from the twentieth to the thirtieth day after inoculation, though usually about the twenty-fifth day. Its duration may be from six to twelve days, but is usually seven or eight days. It is usually mild; though in case the primary fever is mild, the secondary will be severe; also, in case the animal is foolishly overfed during the primary fever, the sec-

\* Mo. Bull. 48. P. 60, § 2.

Tex. Bull. 63. P. 5, § 4-5.

N. C. Bull., Apr. 1904. P. 20, § 4.

Va. Bull. 104. P. 170, § 2.

† Mo. Bull. 48. Pp. 25, 58.

Tex. Bull. 63. P. 6, § 2-3.

N. C. Bull. Apr., 1904. P. 20, § 5.

Ala. Bull. 116. P. 250, § 3, P. 262, § 1.

La. Bull. 82. P. 7, § 5.

La Bull. 84. Pp. 15-16.

S. C. Bull. 90. P. 15, § 3, P. 18, § 1.

Ga. Bull. 64. P. 158, § 1.

Ala. Bull. 116. P. 252, § 2.



ondary will be severe. Both fevers are over by the fortieth or fiftieth day.\*

The diminution in the red cells of the blood keeps pace with the rise of the fever; they continue to decrease in number for a short time after the close of the primary period, then increase towards normal only to decrease in number with the secondary fever. For a calf, six months old, the decrease is from 10,000,000 per cubic centimeter to 4,500,000 per cubic centimeter; for a yearling the decrease is from the normal 7,000,000 per cub. cm. to 2,450,000 per cub. cm.; for a matured animal much the same as a yearling. The normal solids in the blood of the ox is about 35 to 40 per cent. This falls, indicating the destruction of red cells to 20 or even 15 per cent.†

*On what recovery and maintenance of immunity depend.*—This devolves upon the animal's ability, first, to keep in check the extraordinarily rapid multiplication of the *Pyroplasma bigeminum* in the blood. How this limitation is brought about has not been adequately explained. The fact that it is a limitation of the multiplication, and not the complete prohibition from the blood of the recovered animal of the microparasite, constitutes the difference between the immunity obtained in this disease and the immunity obtained by passing an animal through a mild attack of other microbial diseases. Recovery depends, second, on the ability of the animal to supply red corpuscles as rapidly, or more rapidly, than they are destroyed. This is done by an abnormal excitement of the blood forming functions of the red marrow of the bones. Third, recovery will depend on the ability of the animal to remove waste with great rapidity, a task which falls on spleen, liver, kidneys and bowels.‡

*The protozoan remains in the system.*—This is the peculiar-

\* Mo. Bull. 48. P. 25-27.

Tex. Bull. 63. P. 7, § 5.

N. C. Bull., Apr., 1904. P. 21, § 1.

† Mo. Bull. 48. P. 58, § 2.

S. C. Bull. 90. P. 21, § 1.

‡ Mo. Bull. 48. P. 58, § 5, P. 59, § 1-2.

S. C. Bull. 90. P. 15, § 4.

Ga. Bull. 64. P. 158, § 2.

Ala. Bull. 116. Pp. 252-253.

Ga. Bull. 64. P. 158, § 2.

Miss. Bull. 69. P. 5, § 2, P. 6, § 1.

ity about blood inoculation upon which subsequent tolerance to the disease depends. Two great questions arise here: When an animal has been artificially inoculated, has recovered, has been subjected to light infestation then later to gross infestation, all without serious injury, how long will the immunity to a subsequent attack be maintained if gross infestation should be allowed to cease; how long will the protozoan remain in the blood in sufficient numbers to cause Texas fever if injected into a susceptible animal? These two questions the scientists of the South have not satisfactorily answered. Willoughby found that one animal, after having been passed through the regular order—blood inoculation, light infestation, gross infestation, then removed from gross infestation for eight years, still maintained in its blood enough of the protozoa to cause Texas fever if that blood were injected into a susceptible animal. Dr. Salmon speaks of one the blood of which was virile after thirteen years removal from tick infestation. The question of the variance in virulence of the infested blood has not been investigated.\*

*How to prevent fatalities or relapses.*—Several precautions are necessary to prevent fatalities. All susceptible animals which are to be inoculated, whether Northern or Southern, must be kept free from ticks from birth up to the moment they are to be inoculated. There must be no mild (light) infestation of an inoculated animal allowed until after the sixtieth day from that when inoculation was performed. In case the temperature in the inoculation fevers did not reach 105° F. a second inoculation should be made, fifty per cent. larger than the first, seventy-four days from that when the first inoculation was made. In case the first inoculation was satisfactory, on the seventieth day, the animals having been well nourished and rested after the close of the secondary fever, they may have 100-200 seed ticks placed upon them, their legs oiled with Beaumont oil, and

\* La. Bull. 84. P. 21.

Mo. Bull. 48. P. 59.

Ala. Bull. 116. P. 287, § 11.

Ga. Bull. 64. P. 174, § 2.

Also: 16th Annual Report B. A. I. Pp. 43-52.

21st Annual Report B. A. I. P. 26.

they may be turned out to pasture: provided this is done not later than May 15. Six months at most can be allowed between recovery from the fever and gross infestation, as, after a longer period, the immunity obtained by inoculation will have lost its power. In no case should an animal, just recovered from inoculation, be placed in a field with imperfectly immune animals. Every condition which might lessen the vitality of a recently immunized animal must be avoided.\*

*Bad effects of inoculation.*—There are two points in prophylaxis to be remembered: avoid inoculating a tubercular infection by testing with tuberculin beforehand; avoid conveying a pyogenic infection by seeing that the blood for inoculation does not become contaminated beforehand. Neglect of either would be baleful; and probably result in death. Granted an inoculation free from infection from tubercular or pyogenic organisms, the effects after the inoculation fever depends on the condition of the animal previous to inoculation; its age, constitutional strength, resistance. Very young calves 3 to 6 months old seem to have no ill effect; animals 6 to 12 months old, or over, slowly regain their strength, are stunted and unthrifty. If constitutionally strong they gradually recover; if not they may decline under gross infestation even the second summer after inoculation, have a relapse and die of the fever.†

*Effects of inoculation on reproduction.*—The sexual desire of bulls is lessened, or may be in abeyance, during the inoculation period and for a time after convalescence. If unrestricted copulation is allowed when the animal is pretty well recovered, under gross infestation he is likely to have relapse and death may ensue. Ultimately the full strength of venereal de-

\* Mo. Bull. 48. P. 63.

Tex. Bull. 63. P. 3, § 4, P. 5, § 2.

Tex. Bull. 63. Pp. 10-12.

S. C. Bull. 90. P. 3, § 417.

S. C. Bull. 90. Pp. 4, 9, 10.

† Tex. Bull. 63. P. 10, § 3-7.

S. C. Bull. 90. P. 3, § 6. P. 8, § 2.

Ga. Bull. 64. P. 159, § 2.

Ga. Bull. 64. P. 158, § 6-7.

Fla. Bull. 64. P. 543.

Ala. Bull. 116. Pp. 268-69.

La. Bull. 84. P. 22.

Ala. Bull. 116. P. 252, § 1.

Ala. Bull. 116. P. 254, § 3.

sire returns ; but the full exercise of it should be restrained for a year. In unimpregnated females sexual desire is lessened during the inoculation period and for a short time afterwards. Cows advanced in pregnancy may abort ; but in early pregnancy no abortion is likely. Recently immunized cows suckling calves, under gross infestation may have a relapse. The ultimate effect on the reproductive power of the female is nil.\*

*Success with infested blood inoculation in the South.*—On the authority of Dr. Nesom, recently of Clemson College, South Carolina, now in the United States Government Service in the Philippines, I present this table, compiled by him, and representing the results of the inoculation by State veterinarians of 4750 cattle in eight Southern States up to July 1904.

Veterinarian.	Station.	No. inoculated.	No. deaths.	Per cent. loss.
C. A. Cary	Alabama	45	4	8.9
Chas. F. Dawson	Florida	26	3	11.5
W. H. Dalrymple	Louisiana	200	7	3.5
J. C. Robert	Mississippi	200	12	6.0
J. W. Connaway	Missouri	1800	144	8.0
Tait Butler	North Carolina	63	1	1.6
G. E. Nesom	South Carolina	388	3	0.77
M. Francis	Texas	2028	187	9.2
		4750	361	7.6

The inoculation of 4750 cattle between 1895 and 1905 with a loss of only 7.6 per cent. is a gratifying success undeniably. The method has had two important results: first, losses of Northern animals moved South into the infested region have been reduced from about 80 or 90 per cent. to 7.6 per cent. and the hope is that the loss can be reduced to 5 per cent. ; second, Southern herds having been wonderfully improved by this influx of the best blood of Northern cattle. Pure bred beef cattle are now found in considerable quantities in the great cattle State

\* Mo. Bull. 48. P. 63.

Tex. Bull. 63. P. §3. P. 17. §3-7.

S. C. Bull. 90. P. 3 §6. Pp. 8-9.

of Texas and in the other Southern States as well. Dr. Dalrymple even says: "The time will doubtless come when this treatment will be unnecessary; but not until the South has a sufficiency of pure bred cattle to meet the demand, or, in the event of the complete eradication of the ticks from Southern pastures."\* This indeed is the gist of the whole matter; will the treatment ever become unnecessary or will the South ever have a sufficiency of pure bred cattle unless the tick is exterminated? I submit the statement that, unless the tick is exterminated, there is no likelihood whatever that protective inoculation and other such measures will ever be unnecessary. What, then, are the objections to blood inoculation or other such protective measures?

1. The method does not remove the protozoan, and the tick which transmits it. It encourages the perpetuation of both, and the disease.

2. The method, simple as it looks, involves outlays in time and money which are not commensurate with the results obtained.

3. The method, or others with the same purpose, will have to be continued endlessly as long as the tick exists.

4. This, and other methods like it, are not in accord with the principle of modern medicine that we should remove the cause of a great infection when it is found and stamp the disease out at all hazards.

5. Besides encouraging the perpetuation of the disease the method adds another item of the expense of the disease to the South. The number of protections from death caused by inoculation is insignificant compared with the total death rate from Texas fever annually and the money, therefore, lost. Even if more and more inoculations lessened the total death rate, the disease is not removed.

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\* La Bull. 84 P. 17, §2, Also P. 16, §8. S. C. Bull 90 P. 17.

See also:

Tex. Bull. 63. P. 11.

N C. Bull. Apr. 1904 P. 21, §4.

Ga Bull, 64. P. 159, §4.

Ala. Bull. 116 P 278.

Miss. Bull 69 Pp. 3-4.



6. The method is open to the serious objection that the encouragement of the continuation of the disease is based on a false notion of economy. While apparently encouraging prevention we are in reality encouraging the perpetuation of the disease.

## 2. GRADUAL TICK INFESTATION WITHOUT ARTIFICIAL BLOOD INOCULATION.

In the earliest days of the investigations into the nature of Texas fever it was noted by the investigators of the Bureau of Animal Industry of the U. S. Dept. of Agriculture in 1893 that suckling calves withstood mild tick infestation and shortly became inured to the disease.\* There are three reasons advanced to account for this: The young calf has a far greater number of red corpuscles per cubic cm. than the older animal (9,000,000 to 10,000,000) so that more could be destroyed by the microparasite without the depletion ensuing in early collapse; the red marrow of the bones, or blood forming energies, are more active and greater in quantity compared with the size of the animal than in the adult, hence red corpuscles in the blood are more readily replaced;† and, finally, as the calf is living on animal food, we may here have an analogue to the innocuousness of the *bacillus anthracis* for birds and carnivorous animals.‡

Gradual tick infestation, without the intermediation or assistance of blood inoculation, is only possible, practically, on calves 2 to 6 months old. If tick infestation takes place after that time without inoculation, first, with infested blood, the older the animal the more certain it is that death will intervene.

There are two methods: The natural and the artificial. The natural method of tick infestation is only applicable in the case of suckling calves 2 to 4 months old. Either Northern

\* Bull. No. 1. B. of Animal Indust. Smith & Kilborne. The nature and cause of Texas, Southern cattle fever.

† Cary, Ala. Bull. 116. Pp. 249-250.

‡ Sternberg Immunity and Serum Therapy. P. 96.

Ga. Bull. 64. P. 158, 24.

calves (which have been kept tick-free en route South) or Southern calves may be allowed to get ticks in the natural way, care being taken that they do not receive a gross infestation. The number may be kept within bounds by combing, spraying or greasing. After two mild infestations, with a rest between the first and second, and care that the calves are well nourished, the animals, even though they have not shown distressing symptoms during the mild infestations, are ready for a gross infestation; providing it is not too severe. By the "artificial method" the seed ticks are hatched artificially by placing engorged females in a glass jar with earth, grass or leaves for twenty days at a temperature of 80°-90° F., there to lay their eggs. By removing the thin cloth cover we may count out ticks and place them on the calves by hand. This method is applicable in calves not over 4 to 6 months old. They are kept in a tick-free enclosure and infested first with 75 to 100 ticks; then, after seventy days, with 100 to 200 ticks. When these have matured and the animals passed convalescence, they are ready for the ticky pastures: provided a too severe gross infestation is prevented by combing, oiling or spraying. The one point particularly to be remembered is that, as the obtainment of a tolerance through tick infestation is a very gradual process, the calves must not be allowed a gross infestation until the effects of the light infestations are well over.\*

But the following objections may be urged against this method for prevention of death from Texas fever.

I. Though in this case we do not openly inoculate infested blood, we do virtually the same thing, namely, encourage the continual infesting of the blood of cattle with the protozoa. The only difference is that in this case the ticks do all the work; in the case of blood inoculation the ticks are released from part of the work.

\* Mo. Bull. 48. Pp. 16-18.

Ga. Bull. 64 Pp. 155-157.

Fla. Bull. 64. Pp. 538-542.

Va. Bull. 104. Pp. 168-170.

Ala. Bull. 116. Pp. 247-250.

Miss. Bull. 69. Pp. 14-15.

Miss. Bull. 73. Pp. 11-15.

Ala. Bull. 116. Pp. 284-285.

La. Bull. 82. P. 7.

2. Not only do we unquestionably further by this method the natural method of perpetuation of the protozoa through tick agency, but we actually with our own hands, propagate ticks and place them upon cattle. In either case the result is the same, the increase of the opportunities of the protozoa.

3. If the objection to this is made that the method is employed in order to prevent death from Texas fever, the reply is that the method endlessly encourages the enormous multiplication of ticks instead of tending to do away with them; and that, in doing so, it increases, instead of decreases, the disadvantages to the industry and the trade which the presence of tick brings. The agency of death, the tick, is multiplied continually.

4. Even as a prophylactic measure the method is very limited, viz., to very young calves. The difficulty and the danger is terrible as soon as the calf is weaned. When the calf is five months old, or over, we have the alternatives of artificial infestation, as explained, or blood inoculation; both of which are unnecessarily troublesome while, at the same time, both are unsound in theory and untenable.

5. The total number of deaths by this method is far greater than in blood inoculation.\* The method is apt to be calamitous.

## 2. *Serum inoculation.*

Von Behring, of Marburg, has enunciated a doctrine: That if an animal has acquired immunity against a disease producing microorganism or its toxins, the serum from the blood of the immunized animal will prevent the disease in a susceptible animal. Supposing that the truth held good alike in protozoan as well as bacteridian diseases; investigations were made, between 1896 and 1899, to test the presence or absence of an anti-toxin in the serum of animals which had developed a tolerance for Texas fever. In all cases the tests were made in the bovine race, the object being to discover, if possible, a means of utiliz-

\* See Ala. Bull. 116. Pp. 284-285.

ing sterilized serum from such animals for preventive injection into susceptible cattle. Observations of the blood of Southern immunes, long sustaining a tolerance to the disease, established the fact, microscopically, that these animals had comparatively few protozoa in the blood. By successive inoculations through successive gross infestations with ticks it was believed the somatic cells in the infested animal developed a substance—leucomaines or antitoxins—which were resident in the blood, and which established a resistance to multitudinous propagation of the protozoan within the animal body. However there was one fact which argued against this hypothesis namely, the protozoa were never all destroyed within the animal body as is apt to be the case when antitoxins are formed to resist bacteria in the vascular currents; so that, if an antitoxin were developed in this protozoan disease, it must be of a weak nature else all protozoa would be destroyed in the process of time. It might be supposed that when the animals are completely removed from tick infestation that the protozoa in the animal body would all then, surely, be obliterated; were it not, unfortunately, known that, even if this were done and the animals kept free from ticks for eight to twelve years, (if they lived that long) the protozoa still may be found in the blood in sufficient numbers to multiply rapidly when the blood is injected into a susceptible animal.\*

Connaway, Francis and Schroeder have been leaders in the attempt to discover preventive serum for injection into cattle. Certain investigators worked, avowedly, not to stop the advance of the disease when it is once present, nor to destroy completely, by the antitoxin it was hoped might be present in the serum, the multiplication of the protozoa in the blood, but simply to tide the animal over that period when blood inoculation had customarily been employed. Serum inoculation was

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\* Sixteenth Annual Report, B. A. I., 1899. Pp. 43-48.

Mo. Bull. 37. Pp. 117-129.

Ga. Bull. 64. P. 174, § 2.

21st Annual Report B. A. I., 1904. Page 26, § 1.

to be tried to "establish at least a passive immunity that would tide the animal over the danger period following tick infestation."\*

So far the results of numerous experiments with spleen pulp, with sterilized blood serum have been negative. When animals ranging from one and one-half to eleven years old were injected daily with 40 to 60 c.c. of sterilized serum in Missouri and Mississippi until some of them had had as high as 146 c.c. to 772 c.c.; the result, after tick infestation in June and July, was that all of the eleven died but two, the latter each twenty-four months old. This is an illustration of the misfortune thus far met with in most serum experiments. In a word, usually all attempts to discover a protective serum have been failures.† Still the result suggests one of two thoughts.

1. It has been known for many years: that the solipeds have a natural immunity to Texas fever, in the best use of that word; that *Boöphilus annulatus* have their life cycle sustained by the horse and the ass, the females mature, produce eggs and the eggs hatch in due form without the *pyroplasma bigeminum* being existent. Cannot an anti-toxic serum for Texas fever be developed in the horse by continued infestation with ticks? True this is a protozoan disease and the anti-diphtheritic serum developed in the blood of the horse by von Behring's process may not obtain here. The suggestion, however, may be at point.‡

2. Cattle ticks identical with our *Boöphilus annulatus* have been found on the cattle of Porto Rico which are harmless to the cattle there. Have these cattle a natural or acquired immunity to the Texas fever microörganism. Could a protective serum be obtained from them for our cattle? Probably not; but this has never been tried.§

### 3. *Dips and dipping.*

\* Mo. Bull. 48. Page 3, § 4.

† Mo. Bull. 48. Pp. 3-5.

Mo. Bull. 37. Pp. 117-129.

‡ See 16th Annual Report. B. A. I. Pp. 33-41.

§ 16th Annual Report, B. A. I. P. 23. §3.

S. C. Bull. 90. P. 5.

Ga. Bull. 64. P. 157, § 5.



When it was pointed out by the Bureau of Animal Industry of the U. S. Depart. of Agricul. in 1893 that the microparasite of Texas fever was transmitted by a definite species of cattle tick, the thought uppermost in the mind of the officials was that a means should be found to destroy this tick. Accordingly from 1893 onward to 1903 investigations were constantly made to discover some solution into which the animals could be thrust to destroy these external parasites. The annual reports of the Bureau from 1893 to 1903 continually refer to these investigations.\* Indeed, so ardent was the desire to exterminate the ticks on the animals that Dr. Victor A. Nörsgaard, then an Inspector in the Bureau, was ordered in 1895 to proceed to Texas to investigate various dips suggested.† He obtained important results; and though a perfect dip was not found, the work was continued under his direction, when he was Chief of the Pathological Division of the Bureau, and his reports gave the encouragement that success would ultimately be obtained.‡ The stockmen in the South and the State experiment station veterinarians, Connaway in Missouri and Francis in Texas, helped in the work by suggestion and material aid.§ Vats were devised; various solutions were tried, oils, coal tar products, mixtures of both, arsenious and sulphur mixtures; none giving perfect satisfaction. Finally, with the opening up of new petroleum wells in Texas, it was found that the Beaumont sulphuretted petroleum of that State—an oil saturated with sulphur and of such density that none was precipitated, was the solution of the problem. The work of ten years was crowned in Dec. 23, 1903|| by an order from the Secretary of Agriculture authorizing its use under certain restrictions.

\* 10th and 11th Annual Reports. Pp 12-13. 1883-1894.

12th and 13th Annual Reports Pp 109-118 1895-1896.

15th Annual Report. Pp. 20. 1898.

16th Annual Report. Pp. 23. 1899.

18th Annual Report. Pp. 32. 1901

† Annual Report B. A. I. 1895-1896. Pp. 109-118.

‡ Year Book U. S. Dept. Agr. 1898.

§ Mo. Bull. 37. Pp. 97-105.

|| B. A. I. Order No. 20, 1903.

The order, which has been continued in 1904 and 1905,\* is as follows: It is hereby ordered, That cattle originating in the district quarantined on account of the existence of the disease known as splenetic, Southern, or Texas, fever as defined by regulations of this Department may, after having been properly dipped in Beaumont crude petroleum, under the supervision of an Inspector of this Department, be shipped without further restriction, excepting such as may be enforced by local authorities at point of destination. Provided, That application be first made to this Department, and permission granted to establish dipping stations, and that after being dipped the cattle are examined and certified by an Inspector of the Bureau of Animal Industry; and further Provided, That the cattle when dipped be shipped in clean cars and not driven through the infected district or unloaded therein, except at such point as may be duly designated in regulations of this Department.

As early as 1897, during the thick of the investigations of dipping methods and of dips, numerous applications came in to Washington asking permission to establish a large number of dipping stations along the quarantine line, and it seemed reasonable that such permits should be granted at central points where trade is sufficient to warrant it.† However as no dip was believed to be entirely satisfactory by the U. S. officials no authoritative sanction was given to any dipping method, nor any dip authoritatively certified as of sufficient virtue to warrant a new regulation on dipping. But since 1903, undoubtedly, with government authorization, the greatest interest has been shown in the work. Of course no official figures on the amounts of cattle dipped, where, and with what success, can be had until they are printed in the public documents. Still the stock journals of the South-west, from time to time, contain data on this subject. For instance, we read in the *Texas Stockman Journal* that one firm alone in Oklahoma, successfully

\* 21st Annual Rep. B. A. I. 1904. P. 562.

B. A. I. Order No. 131. Jan 16, 1905.

† 15th Annual Report B. A. I., 1897-1898. P. 20.

dipped, between Jan. and Dec. 1905 under government supervision, 40,030 cattle and lost only six.\* When the official figures appear, judging from this statement, it will probably be found that hundreds of thousands of cattle have been successfully cleared of ticks in Oklahoma, Texas and elsewhere and permission granted, under the restrictions of the regulations, for the cattle to pass North for purposes other than immediate slaughter.

If cattle can be successfully cleared of ticks in this authorized dip and shipped North themselves tick-free, in tick-free cars, and not unloaded anywhere en route to the North as long as they are in the infected district, what does this all mean to the industry?

Prominent stockmen, both north and south of the quarantine line, say that the right to take tick-free cattle to the Northern markets for purposes other than immediate slaughter would be worth millions of dollars to them. For the following reasons:

1. The animals, after passing through the infected district, could be unloaded in the North, Central-west or North-west and sold as feeders. This would be worth fabulous sums in time to the cattle feeders and grain dealers in those regions.

2. The cattle could enter the export live-stock trade without fear that Texas fever would be introduced into foreign countries.

3. They might be placed in the native division of the stock yards and compete on their actual merit with Northern natives.

4. Dipped Southern animals might enter the show-ring North and the merit of the Southern industry be known.

From the standpoint of veterinary science, other considerations enter to favor dipping methods; while at the same time perfect candor requires us to acknowledge certain drawbacks.

1. The destruction of the ticks on Southern animals, which are to go North as feeders, under the strictest pre-

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\* Texas Live Stock Journal, Jan. 17, 1906. P. 8.

cautions, prevents the disease being carried North by them.

2. The method, as its use at present is limited to improve the commercial value of animals going North, is a restricted one. If such animals remained in the South, the dipping would have to be done over and over again, as long as ticks were to be found in the pastures.

3. As there are many tick-free parts of the South, dipping animals to make them tick-free could be utilized when animals from infected portions of a State are to be sold to tick-free countries, or farms. Such animals could be fattened in tick-free regions without proceeding North as feeders.

4. When it is determined by united action to exterminate the tick in the South, by the Federal government working with the State authorities, the dipping method will be used extensively as an adjunct to the methods employed to exterminate the parasite in the fields.

5. Dipping methods, for animals remaining in the South, can have no permanent value until the simple, and perhaps less costly, methods of extermination, based on the life history of the tick, are employed in connection with dipping to clear the whole South of the transmitter of Texas fever.

## II. THE METHODS WHICH ARE BEING TRIED, OR ARE PROPOSED, TO EXTIRPATE THE DISEASE.

The great danger from Texas fever in the South itself is not so much from the fact that the cattle in the infected region must gradually obtain a tolerance to the microparasite and maintain that tolerance, but because there are very many parts of the South which are entirely tick-free. From these tick-free regions older cattle are likely to be sold, driven, or drift into infected parts, or ticky cattle may get into tick-free regions. The result is the same: most of the older susceptible cattle die. This is the reason for the millions of dollars loss, of which I spoke in the introduction of this paper. Yet, strangely enough,

because there are so many tick-free regions in the South, is precisely the reason for the encouragement of methods of extermination of the tick. What we wish to do is to widen the area of these tick-free regions and ultimately to make the whole South tick-free. We may, therefore, now inquire into the extent of the regions which are tick-free, without any ordinary human interference, and the reasons for it.

*1. Tick-free parts of the South.*

There are tick-free regions scattered throughout Alabama, Louisiana, Mississippi, Arkansas, California, South Carolina, North Carolina, Oklahoma, Georgia, and probably in the other States, as appears in the following remarks of the State experiment station veterinarians or others. Cary, of Alabama says: "Many farms in Alabama are tick-free; many town lots are tick-free; parts of many farms and pastures are tick-free." Dalrymple, of Louisiana says: "It has been observed that portions of our own State, such as some of the alluvial districts, and those subject to overflow and inundation are free from cattle ticks. . . . It is an impressive fact, also, that all cotton, corn, rice, sugar, and other cultivated lands, are every year free of ticks until infested cattle are again permitted to occupy them." Robert, of Mississippi writes: "I do not think I am wrong in estimating that fully one-half of the townships in our counties that border on Tennessee are free of cow ticks." He also remarks that in six counties "it is by no means uncommon to find tick-free districts." Vincenheller, of Arkansas says that many parts of Northern Arkansas are tick-free. Ward, of California, speaks of many tick-free districts south of the quarantine line. Nesom, of South Carolina writes: "There are a number of farms in the upper part of South Carolina that are entirely free from ticks and cattle have been purchased and brought to them from North and East for many years without bad results." Butler, of North Carolina, has written: "It (the tick) exists in eighty-four of the ninety-seven counties of this State, but in about forty of these which have had the 'no-fence' or 'stock' law for several years it is becoming much less numerous than



in the remainder where 'free range' still exists." Similar reports come from Oklahoma and Georgia.\*

The causes of this extent of tick-free territory in the South, as far as accidental conditions go, are two: physical conditions which destroy the tick, its larvæ or embryo, and the conditions which are imposed by man without a purposeful and conscious effort to destroy the pest. The physical conditions which bring about destruction are: drowning of seed ticks or disruption of eggs in case of heavy rains carrying them to ditches, brooks or rivers—which accounts for the tick-free alluvial lands of the South; shrivelling of eggs from being exposed to direct rays of sun; freezing of eggs or embryos. The conditions, unconsciously oftentimes, imposed by man which destroy the ticks are: cultivation of the land, which ends for the time being all ticks which were thereon; keeping animals from shady or wooded land or pastures for a long season, which likely kills all ticks. The destruction thus brought about is based on the facts in the life cycle of the tick or the physical conditions which it cannot withstand. The two main facts in the life cycle are: the fact that the parasite must have bovine (or equine) blood before it can reach the oviparous period; the fact that the tick is extremely limited in its locomotion. The physical conditions against it are continued low temperature in the case of the eggs, continued direct exposure to heat or water.†

## 2. *The feasibility of the extermination of the tick.*

From these considerations it would appear that when an organized effort was made by man for the extermination of this deadly parasite, success would be assured. Since 1893, when

\* Ala. Bull. 116. P. 237

La. Bull. 84. Pp. 7-8.

Miss. Bull. 73. P. 7, § 1.

Ark. Exp. Stat Circular. "Suggestions for the prevention of Texas fever." P. 1.

† La. Bull. 51

Cal. Bull. (Circular) No. 1. P. 4, § 3.

S. C. Bull. 90. P. 8, § 1.

Ga. Bull. 64. P. 168.

N. C. Bull., Apr. 1904. P. 4, § 1.

Okla. Bull. 37. P. 12, § 4.

Miss Bull. 73. Pp. 4-6.

Ga. Bull. 64. P. 149.

it was realized that the tick is to be charged with the continuation of Texas fever, the efforts of the scientists of the South have been directed to the study of everything which would lead to the delivery of that section from the tick, its embryo or its larvæ. We have now complete information on this subject and it is certain that very soon organized effort of the Federal government and of the State governments will be made for the removal of the parasite.

Indeed the movement, under well directed and organized forces has already begun. Pending the taking up of the entire work by the U. S. Government, some of the States, or counties, near the quarantine line within the States, have started to destroy the parasite. Under the manly influence and leadership of Dr. Tait Butler, North Carolina, by aid of this State Veterinarian and his assistants, cleared six entire counties and parts of two others between 1902 and 1905 and relieved them from the quarantine: Wilkes, Caldwell, Burke, Catawba, Lincoln, Gaston, and parts of Surry and McDowell. Between 1905 and 1906 he added Alexander, Irewell, Davie, Surry, and parts of Rowan and McDowell. All the work of clearance was done at an expense of only \$12,000, or half of what the loss, through the tick, was, per annum, before the clearance. The Federal government, working in coöperation with State and territorial sanitary boards, has, since 1897, cleared up many counties in Oklahoma and Texas bordering on the quarantine line. In Texas these are Randall, Swisher, Hale, Lubbock, Lynn, Garza, Scurry, Fisher, Kent, Dickens, Motley, Hall, Donly, Midland, Crane, and the western part of Pecos. In Oklahoma there have been cleared: Day, Dewey, Custer, Blaine, the western part of Noble and that part of the Ponca Indian Reservation lying north of the salt fork of the Arkansas River.\*

3. *On the methods of extermination which are applicable.*

\*" Progress made in exterminating the fever tick in North Carolina." Tait Butler, Feb. 1, 1906. P. 1.

Also paper, same title, Jan. 1, 1906.

See Annual Reports, B. A. I. 1897-1905. "Rules and Regulations,"

As the life cycle of the tick takes place on the animals (cattle, horses, mules) and on the ground where these infested animals are, or have been, our efforts to exterminate the tick must be directed to both places: to clearing the land where the engorged, egg-laying female, the eggs and seed ticks are found; to clearing the surface of the animals, where many males are found and females remain up to the time they are ready to deposit eggs.

There are three main ways to exterminate ticks on the land: by tillage, by burning over, by keeping cattle from a pasture or from part of a pasture at a time. Ploughing land and keeping it planted for a season removes all the ticks from it unless infested cattle are allowed to forage in it. Burning over thoroughly a pasture completely destroys all tick life therein. If neither of these ways can be employed for clearance, the pasture land may be divided into two sections divided by a rail or board tight to the ground. The first year, from Sept. 1 till spring keep all cattle, horses and mules from one-half, and also from the lanes or runways which lead to it. The second year, in late spring, provide new lanes or runways, over which no animals have been the previous year, leading to the pasture left vacant. Place the animals in the half left vacant from September 1 to spring, seeing that no ticks are left on the animals after disinfection. The cleared animals having been placed on a clean pasture, the other half may be cleared by leaving it vacant from spring until November. This is called the pasture rotation or starvation method: for, between September and spring, the ticks in one-half the pasture cannot get bovine blood and all perish; when the cattle, after disinfection, are removed to the cleaned pasture, the ticks in the second half perish between spring and November 1.\*

The method to use for the destruction of ticks on the hides

\* La. Bull. Pp. 7-14.

Tenn. Bull. Jan. 1, 1905. Pp. 5-10.

N. C. Circular, 1905, "How to exterminate the cattle ticks."

Ga. Bull. 49 P. 929. Ga. Bull. 64. Pp. 150-151.

of cattle will depend on the size of the herd. There are five methods: combing, spraying, hand-picking greasing and dipping. The first four are used in case of small lots; the last, because of its expense, can only be made of service for large herds. For instance when small herds are to be turned into a small lot in the spring when "pasture rotation" or burning the pasture methods are being employed, they may be carefully combed, picked over by hand inch by inch to remove all ticks and their softer parts, escutcheon, inside arms and legs thickly greased with axle grease to clog up the breathing pores of the invisible ticks and so cause them to perish. When possible large herds may be dipped in Beaumont crude petroleum before being placed on clean pastures. However the truth is that one, or several, of these methods must be employed for destruction of ticks on cattle in connection with a scheme to destroy the tick life on the land—eggs, larvæ and adults.\*

4. *On the duty of extermination of the ticks.*

The cry is going up all through the South, death to the tick! The profession of veterinary medicine in this country has signalized its intention to do the will of the agricultural interests in the South as soon as that is possible by the grant by Congress of a fund to do the work. The present Chief of the Bureau of Animal Industry of the United States Department of Agriculture, Dr. Melvin, has strongly expressed the willingness of the Department to push the work with its characteristic energy when that moment comes.

The American Veterinary Medical Association, assembled in Cleveland last August, passed the following resolution: Whereas, the Southern cattle tick (*Boophilus annulatus*) and the resulting Federal quarantine restriction on the movement of Southern cattle, is the greatest obstacle to the growth of the cattle industry of the Southern States, and, Whereas, the work of tick ex-

\* N. C. Bull. Apr. 1904. P. 7-8.

N. C. Circu. "How to exterminate the cattle ticks," P. 3-4.

Ga. Bull. 64. P. 151.

Ga. Bull. 49 P. 229.



termination in some of the Southern States demonstrated that it is perfectly feasible to eradicate the cattle tick pest, and, Whereas, the Federal Bureau of Animal Industry has successfully conducted measures to eradicate other diseases when affecting or jeopardizing the cattle interests of other sections of the country ; Therefore, be it Resolved, that it is the sense of this Association that the time has arrived for active and substantial Federal assistance to the Southern States in their efforts to exterminate the greatest present menace to the cattle interests of a large part of our country.

Recently at a great meeting in Richmond, Va., of the Commissioners of Agriculture of the Southern States, at which were present Secretary Wilson, the Chiefs of the Bureaus of Animal Industry, Entomology, Plant Industry of the National Department of Agriculture, and the directors, veterinarians and entomologists of nearly all the Southern experiment stations, the question of the extermination of the tick was given a prominent place. After stating the condition of the cattle industry of the South, the convention passed a resolution as follows : " Therefore be it resolved by the Association of the Commissioners of Agriculture of the Southern States, that we request the Congress of the United States to appropriate the sum of \$500,000 to be expended, under the direction of the Secretary of Agriculture, in the extermination of the cattle tick (*boöphilus annulatus*) and in the seeking and dissemination of such knowledge that will prevent the enormous losses already suffered by the farmers of the South. Resolved, further, That this Association considers it the duty of the commissioners of Agriculture of the quarantine States to use every effort to secure such legislation as is necessary to obtain effective coöperation between the State and Federal authorities and to secure and use in each State funds for the prosecution of the proper share of this work."

This is not all, the Bureau of Animal Industry stands ready to do to this disease what it did to contagious pleuro-pneumonia and to foot-and-mouth disease—stamp it out, so that it shall be known no more on the continent. The Chief has written : " It



only remains to make the important announcement that this Bureau is prepared, whenever Congress shall confer upon it the necessary powers, and suitable laws and coöperation are obtained and furnished by the various interested States, to undertake to entirely eradicate the disease from such States."\* Those of us who have a lively sense of the burden of Texas fever to the cattle industry of the South should do all we can to further the movement for its eradication.

RECENT BULLETINS ON TEXAS FEVER PUBLISHED BY THE AGRICULTURAL EXPERIMENT STATIONS OF THE SOUTH.

1. Alabama Agri. Exp. Stat. Bull. No. 116. Sept., 1901. C. A. Cary. "Texas or Acclimation Fever." Pp. 231-289.
2. Arkansas Agri. Exp. Stat. Bull. No. 20. 1892. R. R. Dinwiddie. "Parasitisms of Domesticated Animals." P. 31.
3. Arkansas Agri. Exp. Stat. Bull. No. 51. 1898. R. R. Dinwiddie. "Methods of Combatting Communicable Diseases of Farm Animals." Pp. 35-46.
4. Arkansas Agri. Exp. Stat. Circular 1902. W. G. Vincenheller. "Suggestions for the Prevention of Texas Fever." Pp. 1-3.
5. California Agri. Exp. Stat. Circular No. 1, May, 1903. A. R. Ward, "Texas Fever." Pp. 1-7.
6. Florida Agri. Exp. Stat. Bull. No. 64, Oct., 1902. C. F. Dawson, "Texas Fever and Salt Tick." Pp. 524-555.
7. Florida Agri. Exp. Stat. Press. Bull. June 1, 1903. C. F. Dawson, "Practical Results of Texas Fever Inoculations." Pp. 1-4.
8. Georgia Agri. Exp. Stat. Bull. No. 49, Sept., 1900. R. J. Redding, "Cattle Ticks and Texas Fever." Pp. 228-229.
9. Georgia Agri. Exp. Stat. Bulletin No. 64, Aug., 1904. C. L. Willoughby, "Cattle Ticks and Texas Fever." Pp. 145-182.
10. Louisiana Agri. Exp. Stat. Bull. No. 82, second series, 1905, H. A. Morgan, "The Texas Fever Cattle Tick Situation." Pp. 3-15.
11. Louisiana Agri. Exp. Stat. Bull. No. 84, Oct., 1905. W. H. Dalrymple, "Texas Fever; being a general summary of the knowledge of the subject to date." Pp. 3-31.
12. Mississippi Agri. Exp. Stat. Bull. No. 69, Nov., 1901. J. C. Robert, "Texas Fever." Pp. 3-15.
13. Mississippi Agri. Exp. Stat. Bull. No. 73, June, 1902. J. C. Robert, "Texas Fever of Murrain in Southern Cattle." Pp. 3-24.
14. Missouri Agri. Exp. Stat. Bull. No. 37, April, 1897. J. W. Conna-way, "Texas Fever Experiments." Pp. 81-139.
15. Missouri Agri. Exp. Stat. Bull. No. 48, Oct., 1899. J. W. Conna-way, "Immunizing Northern Breeding Cattle for the Southern Market." Pp. 1-64.

\* The National Live Stock Reporter (St. Louis) Jan. 1, 1906. P. 9.  
The Same, P. 12.  
La. Bull. 84. P. 30.

16. North Carolina Dept. of Agri. Publica. April, 1904. T. Butler. "The Cattle (Fever) Tick in Its Relation to the Cattle Industry of North Carolina." Pp. 3, 23.
17. North Carolina Dept. of Agri. Circular Feb., 1905. T. Butler. "Progress made in Exterminating the Fever Tick (*Boophilus annulatus*) in North Carolina." Pp. 1-4.
18. North Carolina Dept. of Agri. Circular, Jan., 1906. T. Butler, same title, Pp. 1-4.
19. North Carolina Dept. of Agri. Circular, 1905. T. Butler, "How to Exterminate the Cattle Tick." Pp. 1-4.
20. Oklahoma Agri. Exp. Stat. Bull. No. 27, June, 1897. L. L. Lewis, "Texas Fever." Pp. 8-16.
21. South Carolina Agri. Exp. Stat. Bull. No. 90, July, 1904. G. E. Nesom, "Texas Fever, Part II. Inoculation." Pp. 3-71.
22. Tennessee Agri. Exp. Stat. Bull. Vol. XVIII. No. 1, Jan., 1905. H. A. Morgan, "Texas Fever Cattle Tick: Pasture Methods of Eradication." Pp. 3-10.
23. Texas Agri. Exp. Stat. Bull. No. 63, Jan. 1902. M. Francis, "Texas Fever." Pp. 3-60.
24. Virginia Agri. Exp. Stat. Bull. No. 104, Sept., 1899. E. P. Niles, "The Prevention of Texas Fever and the Amended Laws Controlling Contagious and Infectious Diseases." Pp 167-180.

DR. J. S. SPANGLER, formerly located at Aurora, Ill., has removed to Los Angeles, Cal., where he will engage in private practice.

THE Minnesota State Dairymen's Association, at a recent session, passed, without a dissenting voice, a resolution favoring the passage of appropriate legislation providing for the tuberculin test of all pure-bred cattle once a year, and that this legislation should in some way protect purchasers of pure-bred cattle by providing for the privilege of tuberculin test within two months after purchase.

THE following story was told by Mr. Cassius Way, '07, at the banquet of the Society of Comparative Medicine of the New York State Veterinary College, on the evening of Feb. 21: "At a quiz at one of the medical colleges the professor of *materia medica* asked for the antidote to mushroom poisoning. The interrogated student being unable to answer, the question was put to the entire class. A hand went up in the rear of the class-room, and a voice said: 'I know, professor.' 'Well, sir, you may answer.' 'It is tannic acid,' replied the bright one. 'Please explain how tannic acid becomes the antidote to mushroom poisoning,' demanded the teacher. 'Well, the tannic acid combines with the *mush*, forming the *tannate of mush*, and leaves *room* in the stomach.'"

## COLIC AND ITS TREATMENT.

By F. H. SCHNEIDER, D. V. S., PHILADELPHIA, PA.

Read at the Annual Meeting of the Schuylkill Valley Veterinary Association, at Reading, Pa., Dec. 20, 1905.

There is no disease in the practice of veterinary medicine that causes the anxiety and loss of sleep as does this disease, or class of diseases that come under this head.

*Definition.*—The word "colic" is derived from the Latin "*colicus*," or Greek "*kolikos*," signifying the colon, and strictly employed, means a painful spasmodic affection of the intestines, especially the colon. Reeks classes colic as true and false. True colic from the intestinal canal and stomach. False colic arising from disease of other abdominal organs, such as diseases of the kidneys and sexual organs that give rise to the same external symptoms. Under the head of true colic, we have spasmodic colic. Spasmodic colic is a spasmodic contraction of the muscular fibres of the small intestines, and is caused by chill, change of food, exhaustion, etc. True spasmodic colic is easily treated by a good diffusible stimulant, anodyne and cathartic.

*Gastric tympany.*—This is one of the most fatal forms of colic with which we have to deal, owing to the small size of the stomach and the absence of regurgitation. Unless we can stop the formation of gases, the horse soon dies from rupture of the stomach. Treatment in these cases must be heroic—stimulants and anti-ferments. When I hear belching or regurgitation of gases, I always administer one ounce of aromatic spirits of ammonia in a pint of warm water every half hour, followed by a hypodermic of strychnine, 1 gr., intravenously. Internal treatment consists of tincture of nux vomica and tincture cinchona comp., ʒss. every hour until acute symptoms disappear.

*Flatulent colic*, caused by fermentation of gases within the large intestines. The same gases are generated in flatulent colic as are evolved in acute indigestion. The symptoms are almost the same, so much so that one condition may be taken

for the other. Some practitioners claim that the diseases are identical, but such is not the case, the two being widely different in character; acute indigestion the more fatal. Treatment: Use the trocar. I think this is the sheet-anchor in these cases. My favorite remedies in these cases are turpentine  $\frac{3}{4}$  ij; carbolic acid  $\frac{3}{4}$  i; chloral hydrate  $\frac{3}{4}$  i, and oil gossypium sem. Oij, repeated, if necessary, in an hour, without the chloral. If distention re-occurs use the trocar. I have used it as often as six times in a night without infection, and have had excellent results.

*Impaction of the bowels.*—This condition is easily detected. When we are called in to see a case of this kind, the first thing the owner will say: "Doctor, it must be his water; he made manure five or six times within the last ten or fifteen minutes." It is then hardly necessary to go any further. You can generally make your diagnosis from the remarks. However, never neglect to make an examination before you make your diagnosis, and hold your tongue on your prognosis; avoid the question if possible. The diarrhoea may mislead you, but after you have made a careful examination you will soon arrive at a positive conclusion that you have to deal with impaction. The animal has a dull appearance and sluggish movements; abdominal pain is manifested in the usual way; he rolls and paws, but not in the violent manner of colic; then there may be slight flatulency, giving rise to tympanites. On auscultation you will find loss of peristaltic movements, due to loss of tone in muscular fibres of the intestines. Another symptom noticed, when a horse is suffering from obstinate constipation: he will back up his hind quarters against the wall. You will sometimes find the rectum distended and congested. Treatment:—Treatment must be prompt and energetic. A good cathartic of aloes, but I prefer oil or a saline purge; for the pain I use chloral hydrate in solution or cannabis indica. Fomentation, turpentine, external massage or hot applications, injections of warm saline solution well thrown up into the bowels. When warm injections do not suffice, I use cold injections of saline solution. The ef-



fect of this cold treatment on the dormant condition of the bowels is wonderful, especially where you have tried all other treatments without avail. Other treatments consist of tonics and stimulants.

*Enteritis.*—I will not dwell very long on this subject, only giving you the differential symptoms between this disease and pure spasmodic colic: 1, Colic, sudden in its attack; 2, enteritis, gradual in its approach, with previous indications of fever. 1, Intervals of rest; 2, continuous pain. 1, Pulse only becomes frequent in the paroxysms of pain, in intervals of ease is normal in number of beats, but evidently fuller; 2, pulse continuously frequent, but small and often scarcely to be felt. 1, Legs and ears of the natural temperature; 2, legs and ears cold. 1, Relief obtained from rubbing belly; 2, belly exceedingly tender and painful to the touch. 1, Relief obtained from motion; 2, motion increasing pain. 1, Strength scarcely affected; 2, rapid and great prostration. Treatment:—None.

In conclusion, I wish to state that I have almost discarded morphia, and I cannot give any gratifying results from the use of barium chloride, eserine or pilocarpine.

THERE have recently been two notable conventions of affiliated agricultural societies in the West, where veterinarians took part in the proceedings—one in Minnesota, and the other in Nebraska.

LAME HORSE AS MOURNER.—When a prince of the Austrian royal family dies, his horse follows the funeral, covered with a black cloth, and lame in one hoof. The lameness is produced by driving a nail through the horseshoe. This is a sign of the deepest mourning.

THE PHILADELPHIA AND READING COAL AND IRON COMPANY has 2785 mules working in and about their extensive mines. Dr. I. C. Newhard has medical charge of them. The Doctor says the average life of a mine mule is between eight and nine years. This is about double the longevity of street car horses in New York. Happily, the noble horse has been relieved from the unnatural burden of drawing cars, excepting in a few instances in the lower portion of the city, and they are scheduled for early retirement.



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## REPORTS OF CASES.

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*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

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### ACTINOMYCOSIS IN A GRIZZLY BEAR.\*

By W. REID BLAIR, D. V. S., Veterinarian and Pathologist New York Zoölogical Park.

This extremely interesting case is probably the first instance where actinomycosis has ever been observed or at least recorded as affecting a bear.

*History.*—The subject, an immature grizzly bear, was captured in Mexico while still a young cub, and when it reached the Park was about six months old. On the day of its arrival my attention was drawn to a good-sized swelling on the side of the animal's face, beginning just below the right eye and extending downward and backward to about the second upper molar. The following day this swelling, which appeared to be a simple superficial abscess, was opened and drained, and washed out thoroughly with antiseptics. The abscess appeared to be of recent origin, and the contents principally sero-sanguinis. After the wound had apparently healed properly, the animal was released from the hospital quarters and placed on exhibition.

Several weeks later a swelling was observed near the site of the former abscess. It appeared as a large fluctuating tumor, and on the suspicion that a foreign body had lodged in the cheek, the animal was removed from the den and placed in an isolated cage. After putting the animal under the influence of an anæsthetic, a thorough examination of the mouth was made. A large abscess was found, with greatly thickened walls, but no foreign body or decayed teeth. This abscess was opened, drained well, and irrigated with strong antiseptics, the animal then given iodide of potassium in milk twice daily for several weeks. Every hope was entertained for complete recovery, the swelling having gradually diminished in size. This, however, was only temporary, since the part again began to enlarge, and at the time of the removal of the tumor it was of about a year's growth.

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\* Presented to the January Meeting of the Veterinary Medical Association of New York County.

The position of the growth was such as not to interfere seriously with mastication or deglutition, so that the general health was not appreciably affected at any time during the course of the disease. The growth, situated on the side of the head, extending from a point near the muzzle backward to the articulation of the lower jaw, was freely movable, and was enucleated without difficulty.

The gross specimen was rather firm in consistence and on section presented yellowish areas, many foci of suppuration, and bands of firm white tissue, numerous bright green round bodies, about as large as peas, were loosely imbedded in the tumor mass. These bodies often had a concentric appearance with a darker colored core and proved to be a species of Ray fungus (actinomyces). The cervical lymph glands was removed and found much enlarged, probably fifteen or twenty times their normal size.

*Microscopical examination* of the tumor shows it to be made up of granulation tissue rich in leucocytes, connective tissue much of it apparently newly formed, and peculiar cells of varying dimensions, from those several times larger than the red blood corpuscles to structures of very large size. Many of these cells are extremely phagocytic and present numerous inclusions consisting of leucocytes, red blood corpuscles and masses of brownish pigment. They are round or irregularly ovoid in shape, some finely granular with a small eccentric nucleus or with several nuclei, others are more coarsely granular, vacuolated and show hydropic changes. These cells, in places, are seen to lie in a connective tissue reticulum—cells with inclusions of leucocytes are numerous, the latter may be fully formed and stain well or are seen in various stages of digestion; six, eight or more incorporations can be counted in a single cell. A few large and apparently typical giant cells are to be observed.

The actinomyces lie in masses of granulation tissue exceedingly rich in leucocytes. The species could not be determined, and consisted of a branching mycelium with fragmentation of the threads, the ends of which were club shaped. The threads were somewhat smaller than the usual actinomyces bovis. Whether the growth began in the glandular or connective tissue structures around the mouth could not be decided.

The peculiar cells above described are probably of endothelial origin; their significance will be spoken of later.

The *cervical glands*, some nearly as large as a hen's egg, are not adherent and rather soft; cut surface pale, with yellowish

discolored areas, reminding one of cheesy degeneration. Microscopically the capsule is perhaps slightly thickened; large bands of connective tissue traverse the gland substance, though a true reticulum is but slightly marked; vascularity perhaps somewhat increased.

The lymphoid elements are increased in number and their size varies slightly. Numerous large cells much resembling those above described are found singly or in groups and columns throughout the gland. They also show marked phagocytic tendencies, the inclusions comprising leucocytes or lymphoid cells, many red blood corpuscles and pigmented masses. They appear to be of endothelial origin and correspond to the areas of discoloration noted on the cut surface of the fresh specimen.

The *spleen* is probably normal; perhaps the follicles are to be considered as enlarged; the thick muscular trabeculae presenting a decided contrast to the normal human spleen.

The *kidneys* show parenchymatous and fatty changes, particularly marked in the convoluted tubules.

The *liver* presents areas of necrosis, pigmentation of cells and degenerative changes.

The *pancreas* shows advanced post-mortem autodigestion.

The *heart* is dilated; the muscle is pale and mottled and presents a considerable degree of fatty degeneration.

The *lungs* present evidences of brown induration.

The character of the actinomycotic tumor, with the exception of the very marked phagocytosis and enlargement of the endothelioid cells presents nothing unusual.

The changes in the cervical glands, where no actinomyces or bacteria were demonstrable, are however to be considered as peculiar, and are doubtless due to the presence of the toxins produced by the Ray fungus. The case presents a striking analogy to the conditions found in the mesenteric glands in the earlier stages of typhoid fever, where the endothelial cells become enlarged, show amœboid movements and are phagocytic. The cells referred to in this paper could well be taken as types of the so-called "typhoid cells;" here, however, the process is much exaggerated.

It is known that various bacteria, such as typhoid bacilli, streptococci, etc., through their toxins induce proliferation of cells or cause fixed cells to take on amœboid movements and become phagocytic. That these changes in the glands, namely proliferation, enlargement and phagocytosis in the extraordinary degree here noted, can also be caused by the Ray fungus, in or-

gans not showing the actual presence of the fungus, appears to be rare or unrecorded. Certainly the process is interesting from the standpoint of comparative pathology.

SPINDLE-CELLED SARCOMA — MULE.

By A. T. KINSLEY, M. Sc., D.V.S., Kansas City, Mo.

October 25, 1905, a brown mare mule was presented to the hospital of the Kansas City Veterinary College for treatment.

*History.* — This mule was bought from a commission company at the Kansas City Stock Yards, about March 1, 1905. The purchaser noticed at that time a small "warty" growth below the right inferior eyelid, but thought it of no consequence. The mule was worked by a grading outfit through



CUT 1.

Appearance of Mule Before Treatment.

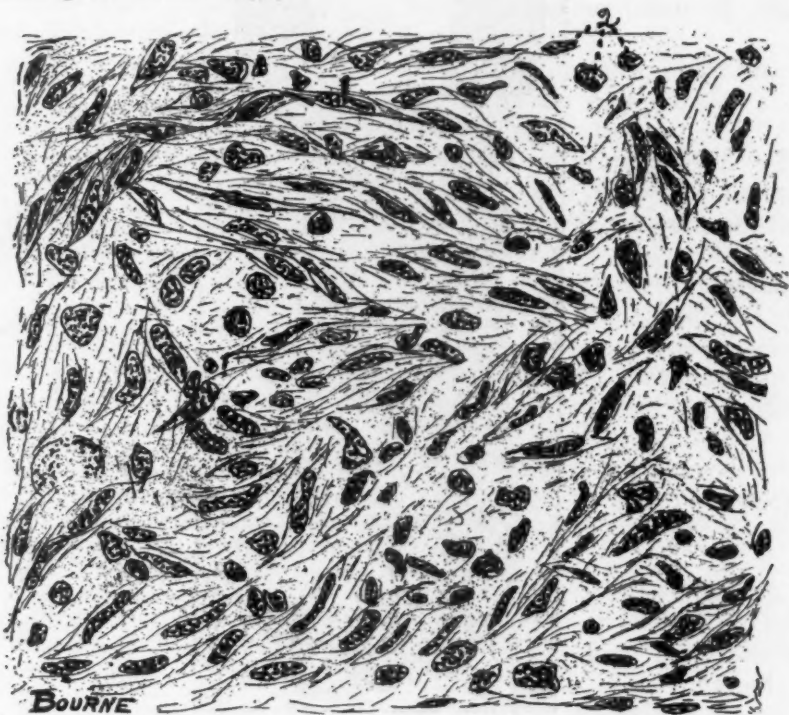


the spring and summer. About September 1 the driver noticed the left superior eyelid was considerably swollen, but thought the mule had probably injured it by striking her head against the feed box. The swelling increased gradually and the mule was sent to the hospital.

*Symptoms.*—Upon examination a nodular growth was found inferior to the internal canthus of the right eye (Fig. 1, Cut 1). The nodules were somewhat larger than a pea, firm, pink and involved the dermis principally, although some of them extended into and involved the subcutaneous areolar tissue. The surface was denuded and hæmorrhagic over the larger nodules.

The left superior eyelid was involved, especially near the external canthus, where the growth projected outward, thus causing the tarsal margin of the eyelid to turn outward and upward (Fig. 2, Cut 1). This growth was in the sub-conjunctival tissue, the mass appearing as granulation tissue.

Clinically the growths appeared as neoplasms, and prognosis given accordingly.



CUT 2.

Microscopic Appearance of Section of Neoplasm  $\times 900$ .



*Treatment.*—The growth in the superior left eyelid was carefully dissected out, preserved for microscopic study, the surfaces of the wound curetted and saturated with thuja oil. The growth inferior to the right eye was curetted and saturated with thuja oil. Thuja oil was injected subcutaneously into the region of the growths about two weeks later, because there was some evidence of their recurring. Local applications of thuja oil were prescribed for further treatment.

*Microscopic diagnosis.*—The growths were fixed in 4 per cent. formalin, imbedded in collodion and sectioned. Microscopic examination of the sections was made and the growths found to be small spindle-celled sarcomata. The cells were rather closely packed and the cell bodies, as is frequently the case in sarcomata, were not clearly outlined in all the cells, but an occasional one is discernable, as shown in Fig. 1, Cut 2. Fig. 2, Cut 2, indicates the nuclei of the cells in which the cell bodies were not clearly outlined.

The intercellular substance was found to be reticular connective tissue. The growth contained many small, apparently normal bloodvessels. Lymph spaces and lymph vessels were absent.

The growths will probably not recur because—(1) the cells were closely packed, (2) the intercellular substance was reticular connective tissue, and (3) the bloodvessels were practically normal, which are indications that the tumors are benign. The conclusion is based on previous observations in similar cases. The mule was recently reported to have practically recovered.

NOTE. — Photographs taken by L.I. Champlain, D.V.S.

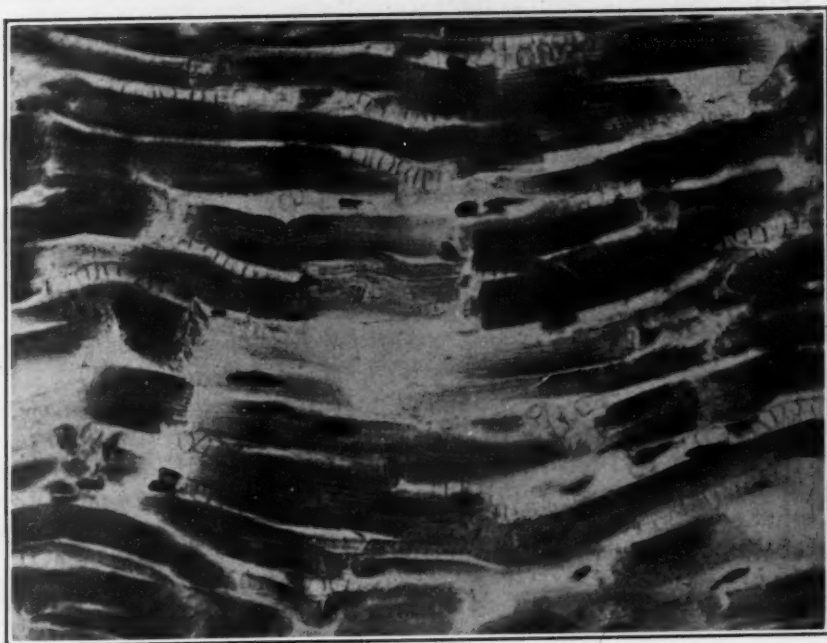
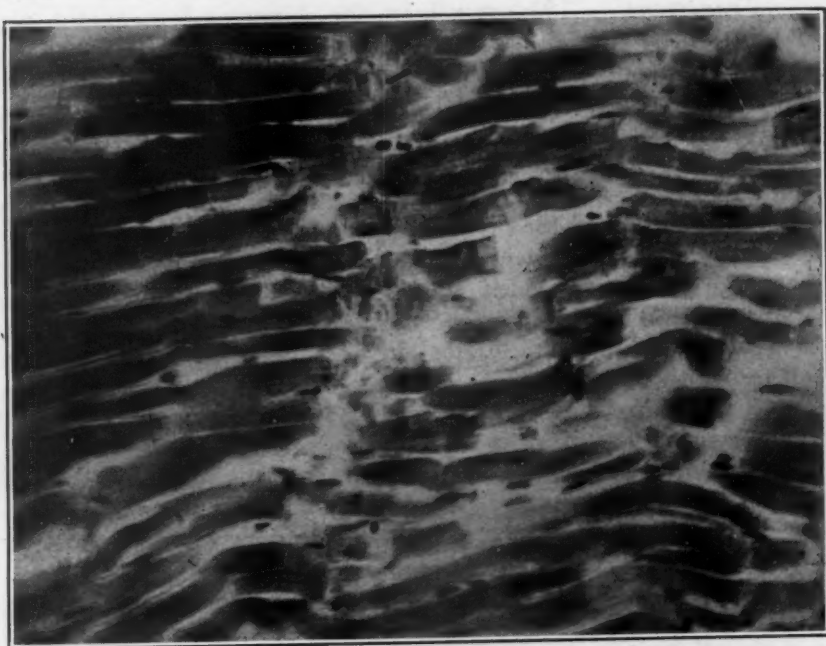
#### SEGMENTATION AND FRAGMENTATION OF THE HEART.

By C. H. SCHULTZ, E. P. JOHNSON, FRANK P. ST. CLAIR, Seniors, McKillip Veterinary College, '06.

Bay filly, one year old, suffering from influenza, complicated by pneumonia.

*Previous history.*—Has had no injury or disease previous to last illness, except gastro-intestinal catarrh, occurring intermittently, covering a period of about two months. Recovery from the intestinal trouble was apparently complete before the influenza set in. Pneumonia was characterized by extreme cardiac weakness and a return of the intestinal disturbances.

*Post-mortem* revealed characteristic lesions in the lungs, and also a peculiar condition of the heart. Heart was found to be



about normal in weight and size. Epicardium and endocardium normal. Coronary vessels patulous. An area comprising about four-fifths of the right ventricle, a portion of the right auricle, and about two fingers' breadth of the left ventricle, involving the entire thickness of the wall, appeared lifeless, grayish in color and has the appearance of cooked meat. It is so soft and friable that the finger can be pushed through it at any point.

*Diagnosis.*—Degeneration of the heart muscle, brought about by the influence of bacterial toxins produced in the lungs or intestinal tract, or both.

*Pathogenesis.*—Degeneration of the heart muscle is a frequent concomitant of diseases characterized by septic intoxication, but in most cases the damage is not extensive enough to cause death. When the destruction is limited, scar tissue fills in the degenerated area, the integrity of the organ is maintained and the patient lives. This is the usual course.

Occasionally, however, as in the case under consideration, so much of the heart wall is involved that reparation is impossible, and syncope results. The pathogenesis is not difficult to understand. By reason of extensive growth and multiplication of bacteria in the economy of the patient, his circulation becomes loaded with toxins, which are rank tissue poisons. His heart enervated and fatigued easily falls prey to their influence.

Clinical symptoms are usually well enough marked to make the diagnosis reasonably certain. When in the case of an acute infectious disease the patient shows a weakness and depression not to be accounted for by the findings in his particular case, it may be presumed that the disease of the myocardium is present, especially when there are seen an irregularity of rhythm and a weakening of the impulses, particularly of the first sound, which may be entirely inaudible.

The pulse is irregular and weak, and dyspnoea marked.

Cardiac degeneration is probably more common than it is thought to be, and is undoubtedly the determining factor in many of the fatal cases of acute infectious disease ascribed to heart failure. The condition is of interest to the pathologist chiefly, for it is obvious that treatment is useless, other than that directed toward the husbanding of the natural forces and supreme stimulation, with the hope that the destruction of heart tissue may be limited and that it may be possible to tide the patient over the crisis, until nature may fill in the degenerated area with connective tissue.

*Microscopic appearance.*—The organ was only in a fair state of preservation and had evidently been thoroughly washed in water before being shipped.

Sections of tissues from the wall of the right and left ventricles and auricles were fixed in Bichro-acetic, Zenker's and Flemming's solution, hardened in the alcohol series and imbedded and sectioned in paraffine. Fresh teased preparations were examined as to their reaction to acetic acid and Lugol's solution, with negative results. This excluded advanced albuminous degeneration or amyloid changes.

Sections from the right ventricle were selected in such a manner, that the endocardium, the myocardium, and the epicardium were cut transversely, permitting close study of their relation.

Many sections from different anatomical regions were mounted and stained with Delafield-hematoxylin, alumn-hematoxyline, eosine, methylene blue and Van Giessen's stain. This was necessary to make sure, that different conditions did not maintain in different parts, as for example lesions due to trauma, parasitism or minute emboli.

The endocardium was found to be normal; the epicardium was normal in structure but in some sections was rubbed until the epithelial layer was injured to a considerable degree, a condition evidently due to rough handling during transportation. No evidence of inflammatory processes could be demonstrated.

The myocardium does not show the usual changes of a primary inflammation. Near the epicardium, but never extending out to it, a region with cloudy swelling can readily be traced; in some sections the nuclei gives a characteristic staining reaction and the fibres of the myocardium appear pale in color and are turbid; a few are granular. Round-cell-infiltration is not in evidence; negative chemotaxis; proliferation of connective tissue cells absent. The veins usually distended with blood corpuscles, hence passive congestion. They are also found in numbers in the perimysium.

The most remarkable change noticeable in all the section is the condition often found, but so little understood: segmentation and fragmentation of the fibres of the heart muscle. Since some authorities attribute this to faulty technique, we decided to duplicate all the former work and prepared slides with great care. These demonstrate beyond all doubt the conditions we have to deal with. The slides which we submit to your kind consideration and study are quite typical. The transverse split-



ting of the fibres can readily be seen, and the absence of inflammatory changes and often pale nuclei suggest toxæmia. Stengel, on page 397, describes it. Virchow has studied it thoroughly and inclines to the belief that it is an acute ante-mortem change, produced by toxins. Dr. Hecktoen says that it is a morbid change frequently found in the myocardium under a great variety of circumstances. Delafield and Prudden consider it a secondary ante-mortem condition.

Taking the majority of authorities into consideration, we can arrive at the conclusion, that fragmentation and segmentation of the heart muscle fibres was due to the influence of toxins, produced by a primary disease in the abdominal or pulmonary organs.

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A CRYPTORCHID HORSE WITH A CYSTIC ENCHONDROMATIS TESTICLE.\*

By DR. S. H. SWAIN, Decatur, Ill.

On June 9, 1905, while castrating several cryptorchid horses at the request of Drs. F. J. Bliss and Tillman, of Earlville, La Salle County, Illinois, a Mr. H. W. Densmore presented for operation a very fine specimen of a one-year-old Percheron colt. This colt was large for his age and had been well fed, and Mr. Densmore prized him highly and seemed anxious that special care should be exercised in the operation on this colt lest misfortune should overtake him.

The ropes were carefully adjusted, the colt cast and secured for the operation, and antiseptic and cleanly precautions were observed. Then, assisted by Dr. A. C. Tillman, I at once proceeded to operate. Incising the scrotal region, the hand was passed through the inguinal canal; the peritoneum was then opened and the index finger introduced into the abdomen of the colt, where the vas deferens was readily and easily secured, but on retracting the hand, securing the vas deferens, a halt was made when the supposed testicle reached the peritoneal wound. Moderate traction having failed in delivering the testicle, an examination was made for the obstruction, when it was discovered that instead of a testicle we had to contend with an enormous testicular cyst. Having had experience with some three or four other similar cases, it required but a moment for us to decide upon the phenomenon and proper mode of operation.

The cyst was drawn up close to the surgical opening; a

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\* Read before the Illinois Veterinary Medical and Surgical Association, Jan 18, 1906.



trocar was carefully introduced into the cyst; the trocar being withdrawn, the canula left in place and the liquid contents permitted to escape, it being necessary to repeat this part of the operation, as the cyst was composed of several compartments, each containing a liquid of very different appearance, one as clear as distilled water, another of a milky appearance, and still another containing what seemed to be healthy urine and also emitting an odor very much resembling that of the urine of a horse. It also contained cartilaginous phenomena.

It was necessary to puncture each compartment in order to reduce the size of the cyst sufficiently for its delivery, which was with some difficulty accomplished by careful continuous traction upon the vas deferens and upon a vulsella securely fastened in the membranes of the cyst. The spermatic cord was so elongated that the cyst could readily be laid out upon the ground near the horse without stretching the cord. The cord was severed by means of the ecraseur. The wound was then carefully cleansed and made aseptic by means of an application of a highly carbolized oil. The ropes were now removed and the patient permitted to rise, which he did without apparent injury, and was next conducted to a suitable stall and secured with the posterior parts somewhat elevated in order to guard against hernia of the bowels.

Instructions were left for the proper care of the patient and also a request that we be frequently notified by telephone, through the office of Drs. Bliss and Tillman, as to his condition; and then Dr. Tillman and I went to Earlville for the evening. We received the most flattering reports of the patient up to noon of the following day, when I left for home, leaving all my patients in the care of Drs. Bliss and Tillman and requesting them to inform me as to the result of this and all other operations performed by me while there.

I will now append their report.

"EARLVILLE, ILL., June 20, 1905.

"*Dr. S. H. Swain, Decatur, Ill.*

"MY DEAR DOCTOR:—The six ridgling horses you castrated for us have all done well. The Densmore colt, that no one could have expected to do well, to say nothing about living through such a formidable operation, has done as well as any of them. I have seen them all, and will say with all candor, Doctor, that we consider you the king of all ridgling castrators. There has been nothing with all of those operated upon that gave a moment's concern. We think we were fortunate in se-

curing your services, and you may consider yourself engaged to do all of our ridgling castration in the future.

"With the sincerest regard, we are

"Drs. F. J. Bliss and Tillman."

COLLECTION OF PUS IN GUTTURAL POUCH FOLLOWING AN ATTACK OF ACUTE PHARYNGITIS.\*

By H. E. TITUS, V. S., Lafayette, Ind.

May 17th, 1901, a six-year-old gray mare was sent from the country to the hospital for treatment. Diagnosed acute pharyngitis and prescribed ext. belladonna and potassii iodide and applied a blister to the throat. Nothing whatever was heard from this patient until February 8th, 1902, when she was again presented at the hospital for treatment, showing no constitutional symptoms; the head was held extended, and side movements avoided.

A thick yellowish white fluid came from the right nostril, and was increased and became purulent on depression of the head. A snoring inspiratory sound could be heard when the horse was resting, which, on the slightest excitement or movement, became audible also in expiration. Deglutition visibly caused difficulty; part of the water taken flowed back through the nostril.

A swelling existed in the parotid region, most marked on the right side. No doubt could exist as to the diagnosis and operation was decided upon by Viborg's method.

With the patient in the standing position, an incision four inches in length was made in the middle of the triangle and parallel with the sterno-maxillaris muscle and reaching to the border of the lower jaw.

Upon opening the sac some 3 or 4 pints of turbid fluid containing about seventy chondroids, weighing  $6\frac{1}{2}$  ounces, flowed out. The cavity was thoroughly washed and packed with corrosive sublimate gauze; each day for two weeks the dressing consisted of zenoleum or permanganate of potash solution, with occasional dressing of carbolic acid, followed by alcohol.

March 1st, 1902, patient dismissed from hospital, to be returned once a week for treatment.

March 21st, patient returned and wound reopened, because sac had again filled; sac very small; was given the carbolic acid treatment and packed with gauze.

\* Read at Annual Meeting of Indiana State Veterinary Medical Association, at Indianapolis.

May 10th, treatment discontinued and animal sent home. June 30th, patient quite capable of work; the operative wound closed, secretions slight, parotid region normal. Patient now received daily six drachms of iodide of potash for ten or twelve days. December 22d, patient again returned, having completely recovered.

CHRONIC NEPHRITIS AND FATAL UREMIA DUE TO A VERMINOUS ANEURISM.\*

By H. E. TITUS, V. S., Lafayette, Ind.

This patient was a black pacing gelding, six years old, purchased by the manager of the Artificial Ice Company, Oct. 1, 1901, of a local dealer. No history accompanied the bill of sale.

Oct. 6, gelding was sent to the hospital for examination of teeth. Patient at this time weighed perhaps 1050 pounds, and looked as if he had been poorly cared for; dressed the teeth and prescribed artificial Karlsbad salts. Oct. 16, he was again returned, suffering with influenza, from which he recovered in ten or twelve days. Nov. 15, horse was again presented for treatment, with the statement that he was inclined to turn to the left as he was driven, owner thinking perhaps his teeth were at fault. An examination of the chest revealed a case of pleurisy of the left side. Remained in hospital for two weeks, when he was again sent home apparently in good health. At this time, however, I advised owner to give patient absolute rest in a large roomy box and pleasant days to be turned out in a small grass plot close to the stables. Jan. 9, 1902, received a telephone call to the stables, and upon my arrival found this same horse again needing attention. The statement of the attendant was that up until a few days prior to Jan. 9, the horse had been doing well, and not until that day had he refused his feed. As he was taken from his box to water, he had noticed him appear stiff and unsteady in the posterior extremities; stall was not as damp as usual, and never had he shown any signs of colic. Upon examination found pulse feeble and irregular, respiration labored, subnormal temperature, extremities oedematous. Sample of urine showed increase of specific gravity, contained albumen, casts, and epithelial cells.

Diagnosed chronic nephritis, due to some interference of the circulation, but as to the nature I could only guess. My prognosis unfavorable. Treatment consisted of cardiac tonics and diuretics.

\* Read at Annual Meeting of Indiana Veterinary Medical Association at Indianapolis..

January 20th, received telephone message that my patient died during the night.

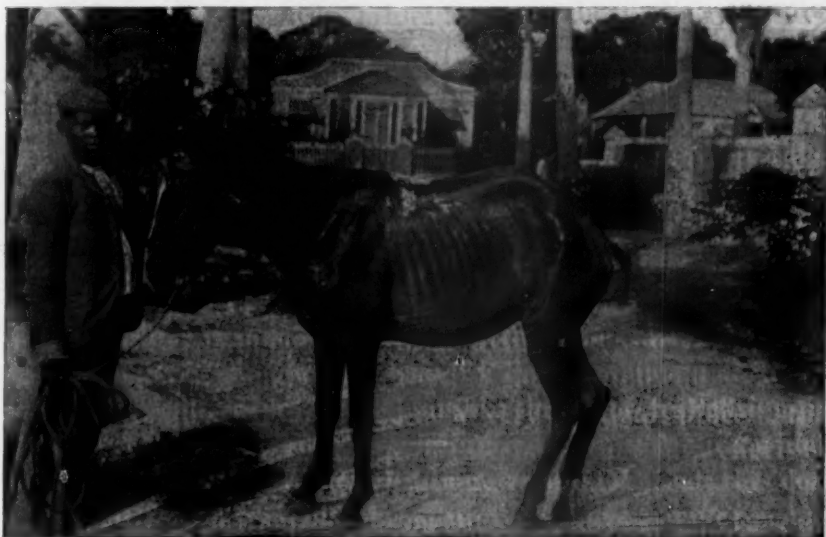
The autopsy revealed the cause of the chronic nephritis and fatal uremia to be due to an aneurism of the posterior aorta caused by the *Strongylus armatus*.

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BARBADOES PONY WITH CURVATURE OF SPINE.

By R. ASSOUTS, D. V. S., Government Veterinary Surgeon, Barbados, West Indies.

I send you herewith for publication in the REVIEW, a photo-



graph of a native pony, whom I have known for about fifteen years. During all this time he has never been unable to do his work satisfactorily. What is wrong with him?

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INDURATION OF STOMACH WALL, WITH RUPTURE.

By J. F. WINCHESTER, D.V.S., Lawrence, Mass.

Subject, bay mare, aged.

*History.* — March, 1905, colic due to indigestion; duration three days; subsequently has had several attacks that were of short duration and spontaneous recovery from the pain, but did not thrive well; appetite capricious. June 29, 3 A. M., she was noticed in severe pain, and caretaker gave colic drench. I



saw mare 7 A. M.; made diagnosis of peritonitis with unfavorable prognosis, and she died about 3 P. M.

*Post-mortem.*—June 30, A. M., bloated; large amount fluid escapes when abdominal cavity is opened, together with hay and grain. On large curvature of stomach was found an ante-mortem rupture of external coat, about twelve inches, and that of the inner coats about three inches. Opening the stomach the grain of the evening meal was found filling the stomach. The pyloric portion of the inside was quite red and the wall of that portion was indurated, while at the pyloric opening it was quite two inches thick, extending into the walls of the small intestine.

My observations in the past have led me to cite this case, since the literature of induration of the walls of the pylorus and that portion of the stomach is not very plentiful, and it may induce the observer to complete an examination, especially in those cases with the above history.

DR. REYNOLDS has been elected Secretary of the Minnesota Examining Board, in place of Dr. Youngberg, resigned.

DR. WM. F. EGAN, formerly of San Francisco, Cal., has been appointed Territorial Veterinarian for the Hawaiian Islands.

WILLIAM H. CURTISS, M. D. C., Marengo, Ill., died in November after only a few hours illness. He was a graduate of the Chicago Veterinary College, class of 1889, and did a successful practice.

DR. W. H. PENDRY, Brooklyn, N. Y., "the father of the first law regulating veterinary practice in America," (New York law, 1886), is now a practicing attorney and counsellor at law, with offices at 1302-1304 Broadway, Brooklyn.

DR. REYNOLDS, of St. Anthony Park, and Drs. Dill and Philp, of Mankato, attended a recent meeting of the Minnesota State Dairy Association at Mankato, Dr. Reynolds giving an address on "White Scours."

DR. PETERS, of Nebraska, addressed a combined convention of the Minnesota State Live Stock Breeders' Association and the Minnesota State Agricultural Society, at Minneapolis, in January.

DR. J. G. RUTHERFORD, Veterinary Director-General of Canada, is, according to the press reports, to investigate the conditions under which Mexican cattle are raised and inspected, so that he may from personal observation, be enabled to judge how stringent the import regulations on such stuff should be.



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## SURGICAL ITEMS.

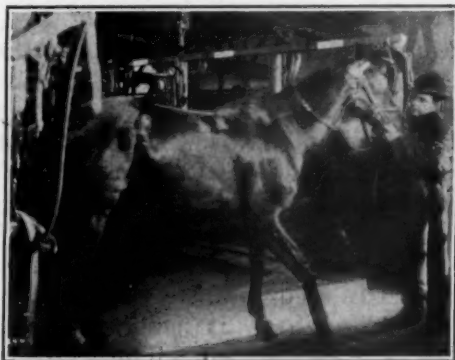
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BY DRs. LOUIS A. AND EDWARD MERILLAT, CHICAGO, ILL.

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### BRACHIAL PARALYSIS.

*Definition.*—The term "brachial paralysis" is now quite commonly used to designate a special peripheral nerve paralysis of the horse, manifested by a partial or complete paralysis of the muscles receiving their innervation from the brachial plexus. It is a paralysis of traumatic origin affecting one or more of the large nerve trunks proceeding from the plexus to the various parts of the anterior extremity. It is both a *motor* and a *sensory* paralysis, the nerve trunks at the plexus and in the arm being mixed nerves. It is *partial* or *complete* according to the severity and the extent of the injury, and *general* or *local* according as all or only a part of the nerve trunks are injured.



BRACHIAL PARALYSIS OF 24 HOURS' DURATION, CAUSED FROM SLIPPING WITHOUT FALLING TO THE GROUND.

*Etiology.*—Brachial paralysis is caused by *bruising*, *crushing* or *stretching* the nerves, within or proceeding from, the brachial plexus, which occupies the confined position between the bones of the extremities and the ribs. A *fall upon the shoulder* may severely crush the plexus, fracture the first rib, and produce a serious, complete, general and permanent paralysis of all of the muscles of the extremity, or it may merely bruise one or more of the component parts of the plexus and thus provoke a trivial, local, partial and transient paralysis. Between these two extreme cases are all the intermediate ones, which vary in serious-

ness according to the nature of the lesion. An *outward slip of the fore leg* by violently stretching the large nerve trunks of the arm is capable of causing the lesion in a very aggravated form, an example of which is seen in the accompanying illustration. *Lying heavily upon the shoulder during surgical restraint*, to the writer's personal knowledge, may cause the accident in a mild form, in large horses that fight violently during long operations. *Tugging violently with a confined leg* during surgical operations or when a shoe-calk becomes accidentally fixed into a car track, is also one of the very common causes. In these cases the nerve is stretched to the point of dividing its axones.

*Symptoms.*—The pathognomonic symptoms are shown in the accompanying illustration. The foot is forward, the carpus is flexed and the olecranon is "dropped" far below its opponent. The caput muscles are flaccid, limp, relaxed, paralyzed. Extension is impossible, difficult or slow according to the degree of paralysis. In most cases all of the joints will immediately flex (collapse) if attempt is made to support weight. After some days the paralyzed muscles begin to atrophy with remarkable rapidity, and the wasting process continues until only the stroma of the muscle appears to remain. The elbow drops farther and farther, until it reaches the level of the middle third of the radius or even lower. The patient becomes more or less emaciated, suffers from the various complications that usually supervene serious injuries of a leg, and is finally killed to terminate a lingering hopeless condition. Milder cases may slowly recover after the function of the injured nerve is restored. The very mild case, frequently described under the name of "radial nerve paralysis," may recover in a comparatively short time.

*Prognosis.*—The prognosis is usually grave, for brachial paralysis is a very serious affection. The recovery depends primarily upon the amount of injury the various nerves have sustained. If the injury has not divided their continuity nor mutilated them over too great a length they will regenerate and the function of the muscle will then be restored as fast as the atrophied condition permits; but as both of these two regenerative processes (nerve and muscle) are slow complications in the meantime prevent a favorable termination. It is therefore only the partial or local paralyzed state that terminates favorably. Radial nerve paralysis uncomplicated is usually favorable, for here but a single nerve trunk is injured, the lesion of the nerve is less serious, the patient supports weight on the injured leg and no complications arise to accentuate the decrepitude

that is certain to follow the case of diffuse brachial paralysis.

*Diagnosis.*—Brachial paralysis may be mistaken for fracture of the humerus, scapula, radius or ulna, owing to the fact that the two conditions may co-exist. The almost total absence of pain in the former and the great pain that always accompanies a fracture, even when there is no displacement, will generally serve to differentiate one from the other. When a rib is fractured, however, there may be sufficient pain produced by manipulating the leg to suggest *fracture without displacement*. The differentiation is then made with certainty on the second day by the absence of swelling characteristic of brachial paralysis and the pronounced swelling that is certain to accompany a fracture about the shoulder.

*Treatment.*—Severe cases of brachial paralysis are incurable, those of *nominal* severity and extent will make a partial recovery after a very long period of convalescence if no complications arise, while the *mild* forms all make very satisfactory recoveries. The extreme case is killed, the less severe one is placed in slings until the use of the limb is partially restored and the mild one is turned into the loose box, paddock or pasture. External applications of anodynes, irritants or blisters do not help matters to any appreciable extent. Berns (Brooklyn) has suggested the use of splints or plaster of Paris to support the carpus and thus prevent its forward collapse when effort is made to support weight with the paralyzed leg. This expedient should be valuable in that it prevents the weight of the leg from dragging the paralyzed muscles downward.

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#### COMPLETE FRACTURE OF THE PREMAXILLÆ OF A HORSE CAUSED BY A RATCHET MOUTH- SPECULUM.

That the ratchet mouth-speculum is not absolutely harmless was shown by an accident of recent date that occurred at the surgical exercises of the Chicago Veterinary College. The horse in question had been under the influence of chloroform anæsthesia for several hours while various operations were performed at different parts of the body. The students assigned to the head adjusted a ratchet mouth-speculum (equipped with transverse cups to fit the incisive arcades) preparatory to the operation of repulsing the fourth molar, and in doing so carelessly allowed the subject to partially revive from the anæsthetic

state. While in the semi-comatose condition the jaws champed forcibly and with a crunching noise fractured both premaxillæ two inches behind the bodies. The fracture was a complete transverse one with some comminution of the superior apophyses.

The subject was about eighteen years old, in good general health and spirits, and the examination post-mortem disclosed no general rarifying disease of the osseous system nor evidence of any local changes at the seat of injury, to which the accident could be attributed. It was an accident due strictly to violence without any predisposing cause.

If a horse frantic from surgical pain or confinement or one partially anæsthetized will test the strength of the strongest speculum and not infrequently break it to pieces, is there not always some chance of fracturing the jaws? The above incident answers the question in the affirmative, and should serve as a valuable lesson in view of its possible repetition in animals more costly than an old experimental subject.

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DR. R. W. McCULLY, who has had medical charge of the large sales stables of the Fiss, Doerr & Carroll Horse Company, of New York, for a number of years, has severed his connection with the company to engage in private practice. He will maintain an office in the Bull's Head district, and will undoubtedly enjoy a large practice. Dr. J. Elmer Ryder, of the American Horse Exchange, has succeeded Dr. McCully.

DR. R. A. RAMSEY has been appointed Western Agent of the Bureau of Animal Industry, with headquarters at Denver, Col. Dr. Ramsey has been in the inspection service for some time, having been doing field work in connection with sheep, scab and cattle mange, in the Dakotas and Montana. His new duties will place him in a broader sphere, having charge of inspectors in the West, and looking after the interests of the stockmen, railroads, sanitary boards, etc.

DR. I. C. NEWHARD, of Ashland, Pa., chief veterinarian for the Philadelphia and Reading Coal and Iron Company, delivered six most interesting lectures on the "Care of Mine Mules," during the week of January 29th, to the employees of the company the Doctor is associated with. His lectures were profusely illustrated on the screen, showing some of the underground stables, etc. They were delivered at Pottsville, Ashland, Mahony City, Shamokin, Tremont, and Shenandoah. The total attendance was 2185.



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## ARMY VETERINARY DEPARTMENT.

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### THE ARMY BILL IN CONGRESS.

As announced in the February REVIEW, the bill to improve the efficiency of the veterinary service of the Army, was introduced in both houses of Congress on Jan. 29, and was referred to the Committee on Military Affairs of each body. It had obtained the approval of the General Staff and was recommended by the Secretary of War. Being exceedingly mild in its provisions, it did not appear to us that there could possibly arise any opposition to its passage, and in the form in which it was introduced we do not now believe that it can take any other course than that of enactment and approval by the President.

In the article above referred to veterinarians throughout the country were strongly urged to bring all possible influence to bear upon their Congressman and Senators to secure their favorable influence in behalf of the Bill, and we know of many who have done so.

The Committee on Army Legislation of the American Veterinary Medical Association met at the New Willard Hotel, Washington, D. C., Feb. 21, and was called to order by the Chairman, Dr. T. Earle Budd, of New Jersey. The only other member of the committee present was Dr. A. S. Cooley, of Ohio, but Dr. John R. Mohler, Dr. Buckingham, and Dr. J. P. Turner, of Washington, D. C., were appointed as substitutes. The committee took up House Bill 13385 for consideration, and it was moved by Dr. Mohler, seconded by Dr. Buckingham, that the word "grade" be inserted in lines 5 and 7 of said Bill, making it read "grade, pay and allowances," instead of "pay and allowances," and that lines 15, 16, 17 and 18 be changed to read: "Sec. 8. That any veterinarian now in the service who shall fail in his physical examination and be found incapacitated for service by reason of physical disability contracted in the line of duty shall be retired with rank to which his seniority entitles him to be promoted." Both of these motions were carried.

An article in the REVIEW, page 621, being the resolutions



on Army Legislation adopted by the Cleveland meeting of the A. V. M. A., was read, after which adjournment to the Capitol was carried by motion. Visiting the House Committee on Military Affairs, it was found that Chairman John A. T. Hull was on the floor of the House, and could not be seen. They next called upon Chairman Warren, of the Senate Committee on Military Affairs, after which adjournment was made to the New Willard at 3 o'clock, when the following business was transacted :

The following letter was compiled and forwarded to President Roosevelt :

*" To His Excellency The President of the United States:*

" DEAR SIR :—We have the honor to present to you for your consideration the accompanying resolution which was passed as an expression of judgment on matters of Army veterinary service on the part of the American Veterinary Medical Association at its forty-second annual convention held in Cleveland, Ohio, Aug. 15 to 18, 1905. Very respectfully,

" Committee on Army Legislation	{	T. Earle Budd, <i>Chairman,</i>
		A. S. Cooley, <i>Secretary,</i>
		J. R. Mohler,
		D. E. Buckingham,
		J. P. Turner."

A letter stating the need of the amendments adopted was sent to the Chairmen of the Military Committees of the House and Senate.

It was moved and carried that Dr. Buckingham be delegated to call upon Hon. J. A. T. Hull and explain the Bill as amended.

Dr. Gage, of Fort Meyer, Va., was given four or five copies of the Bill with the Committee's recommendations, who will present them with other letters to both Chairmen Hull and Warren.

In a private letter to the REVIEW, Dr. Budd says: " We did not get an interview with the President, but we were assured by his Secretary that our letter would receive due consideration, and he thought that this would do as much good as if we actually saw him."

## EXEUNT GROSVENOR.

Apropos of the defeat of General Grosvenor for renomination to Congress from Ohio, which he has misrepresented for the past twenty years, the following letter from Dr. Burneson fitly represents the sentiment of the veterinary profession of the country on the passing of this old political hack :

"Enclosed you will find clippings from the *Chicago Tribune*, which news should be received with rejoicing by the veterinary profession of the United States, as he has shown himself to be the lowest form of human parasite known by the veterinarian. The REVIEW should have an announcement, with large headlines, hailing his defeat, as I do not think a reader of the REVIEW has forgotten the unwarranted attack, made upon the veterinarian, by him, at the time the Bill for recognition of the Army veterinarian came up before Congress. I have just finished a letter to him, apprising him of the fact that the veterinarians throughout the land are rejoicing at his defeat—that they have been waiting for his hide for many moons.

Respectfully, J. C. BURNESON,  
6433 S. Sangamon St., Chicago.

DR. R. J. GARNETT (New York State Veterinary College, '05), Newark, N. Y., has entered the practice of Dr. Geo. H. Berns, of Brooklyn, N. Y.

DRS. W. L. BAKER, of Buffalo, and Roscoe R. Bell, of Brooklyn, attended the banquet of the Society of Comparative Medicine of the New York State Veterinary College on Feb. 21, and addressed the students.

DR. E. J. ROBBINS, of Bay Shore, L. I., wears a large ring on his finger, and in withdrawing his hand from a horse's mouth recently, it caught against a tooth, lacerating his finger and causing the whole arm to swell.

THE CHICAGO VETERINARY COLLEGE has an enrollment of three hundred and eight students the present session—the largest number in the history of the school. Forty of this number are taking a post-graduate course.

DR. M. H. REYNOLDS, of Minneapolis, under date of Feb. 16, writes: "I may say that our little Twin City Veterinary Medical Association has so far been thoroughly successful in every way, and is serving a very useful purpose, especially in promoting acquaintance and better feeling socially among the local men."

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EXTRACTS FROM EXCHANGES.

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GERMAN AND HUNGARIAN REVIEW.

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By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Great Bend, Kansas.

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FILARIA PAPILLOSA, REMOVED FROM THE ANTERIOR CHAMBER OF THE EYE [*Prof. B. Plosz*].—The author introduced at the Hungarian Veterinary Medical Association meeting a sample of a *Filaria papillosa*, which he removed on the previous day from the eye of a horse. The presence of the worm was noticed for about two weeks; before the operation the cornea was uniformly cloudy, and through the same in the aqueous humor the filaria could plainly be seen floating around. Its removal was easily accomplished with the aid of a lancet-shaped knife, introducing the same at the border of the cornea. After the removal of the worm, a few drops of the aqueous humor still oozed out, but 12 hours after the operation the edges of the wound adhered together, the wound healed satisfactorily and there were no symptoms of inflammation present.—(*Allatorvosi lapok.*)

OPERATION FOR THE REMOVAL OF AN INTESTINAL CALCULUS [*Prof. B. Plosz*].—A sick fox terrier dog has repeatedly swallowed sand-gravels, which passed out without interference. Since the last six days, however, the animal began to vomit, and a cessation of defecation was also noticed. As the examination with Roentgen rays, at the clinic, showed the presence of dark formations, undoubtedly proving the presence of a foreign body, the animal was operated upon. The incision was made on the linea alba, into which the small intestines containing the foreign body was brought forward. The intestines were opened at the place of the foreign body and a sand-gravel of the size of a walnut, flattened on both sides, was removed. The wound of the intestines was closed with Lambert stitches, while the abdominal wound was closed in two layers, by common sutures. The general condition of the animal remained well after the operation, the offered small quantities of milk and bouillon were eagerly taken. The bandage was removed four days after the operation, and it was noticed that while the sutured deep layer of the abdominal wound was united, the outside suture in the canals of two stitches a little pus formed. The temperature varied five days after the operation from 38.2° to 38.9° C.—(*Allatorvosi lapok.*)

**THE TREATMENT OF BOG SPAVIN, THOROUGHPIN AND WINDGALLS WITH IODINE INJECTIONS** [*Erber*].—The treatment of dilatations of tendinous and articular synovial sacs in horses belongs to the most unsatisfactory undertakings, as they are generally followed by very doubtful results, yet they are so general, especially in draught horses, that exceptions are rare. The application of irritants is generally followed by no results, and from the hot iron we cannot expect better effects, and these heroic treatments often leave scars at the place of application. Lavat's method consists in the following: The horse is thrown and at the highest point of the dilatation it is punctured with a trocar and its contents let out; in its place a solution of 6.0 gm. of iodide of potassium, 100.0 gm. of tincture of iodine, and 200.0 gm. of distilled water injected; then for a few minutes the place is massaged and again tapped. The injection with the solution is then repeated and after the removal of the trocar the puncture is closed. In the following 24 hours a severe reaction follows, through which sometimes the animal will not place weight on the treated leg for a week. But as a general rule the reaction passes away inside of two weeks, during which time the dilatation gradually disappears. Erber applied Lavat's method in 12 cases; in 10 with complete satisfaction, in one only improvement was noticed, while in the 12th the affection was aggravated. In this case, following the injection a very severe and lasting lameness appeared, resulting in atrophy of the hip muscles; after some time the lameness disappeared, but the dilatation (bog spavin) was larger than before the treatment. E. believes that an infection was carried in with the second injection. Lavat places great weight on removing the whole contents of the dilatation, and the injection should be carried out under very strict antiseptic rules.—(*Zeitschr. f. Veterin. k.*)

**OPERATIVE REMOVAL OF A FOREIGN BODY FROM THE STOMACH OF A CAT** [*Prof. Udriski*].—A six-months-old cat manifested cough, profuse salivation, inappetence; its owner suspecting the presence of a foreign body in its throat, attempted to remove the same with a bony hairpin. During the procedure the hairpin slipped out of his hand, and the cat swallowed it. The animal was brought to the Veterinary High School of Bucharest, where Udriski, while laying the animal on its back, felt a foreign body in the epigastric region, which simultaneously with the act of respiration moved slightly; later he could feel the two ends of the pin under the skin. The animal was anaesthetized with ether and the operation was performed.



In the epigastric region, posteriorly to the chest bone an incision was made five c.m. in length through the skin and abdominal muscles, then lifting the peritoneum with a forceps, and tearing the same with a probe. Through the opening a part of the stomach and the liver was visible. The large curvature of the stomach was greatly distended, a portion of 1 c.m. of this was held with the aid of two artery forceps and between them the stomach was opened, from which the pin dropped. After thorough disinfection of the stomach wound, the mucous membrane and the peritoneum were separately sutured, then the stomach was replaced, and the abdominal wound closed with three layers of sutures (peritoneum, muscles and skin sutured separately). The skin wound was painted over with sublimate collodion, and a bandage applied, which was followed by healing *per primam* in eleven days. No bad results could be observed after the operation.—(*Deutsche Thierarzt. Wochenschr.*)

POTASSIUM PERMANGANATE AS A LOCAL HÆMOSTATIC.—Voerner experienced that the concentrated solution of potassium permanganate, or the powder made from this, but especially the latter, acts as one of the best hæmostatics when it requires application on a small area. According to him it is superior to tannic acid, iron chloride and others. Its superiority consists in that it does not destroy the tissues and only hastens the coagulation of the blood.—(*Munch. Med. Woch.*)

CHROMIC ACID FOR THE SUMMER ECZEMA OF HORSES.—Frequently in summer the profuse perspiration, especially in the region of the saddle and collar, causes a severe eczema. Bock recommends a 2 to 3 per cent. solution of chromic acid painted over the affected skin. The chromic acid acts very beneficially in these cases, as it also diminishes the perspiration.

TREATMENT OF WOUNDS OF TENDINOUS SHEATHS AND SYNOVIAL SACS.—Kettner and Rode after the unsatisfactory use in such wounds of sublimate, protargol and other remedies, applied camphor with very good results. The camphor may be used as an alcoholic solution or preferably as an ointment; in the latter case in the following prescription: Olei terebinthinæ, 2.0; camphoræ tritæ, 8.0; unguenti-paraffini, 20.0. Mix. Sig. Apply externally.

TREATMENT OF WOUNDS WITH EXCESSIVE GRANULATIONS.—According to Fuchsel, such wounds heal rapidly after painting them with a 10 per cent. solution of formalin. Also in cases of itching eczemas and chronic indurated inflammation of the skin, a 5 to 10 per cent. solution gives excellent satisfaction.



## GERMAN REVIEW.

By J. P. O'LEARY, D. V. S., Bureau of Animal Industry, Buffalo, N. Y.

EXPERIMENTAL TRANSMISSION OF HUMAN TUBERCULOSIS TO CATTLE [*Dr. Ludolph Brauer.*].—Since the well equipped Veterinary Institute at Leipzig has been at the disposal of Dr. A. Eber, he has been occupied with the study of the transmission of tuberculosis. The present pamphlet is the result of this work and might furnish important proof for the question raised by Dr. Koch. For his experiment of the transmissibility of human tuberculosis to cattle, Eber used material from five children, three of whom were found to be accidentally infected with intestinal tuberculosis. In the remaining two cases, diagnosis *intra vitam* showed pulmonary and intestinal tuberculosis. Seven young cattle were at his disposal. At the same time, Eber was able to test the transmissibility of animal tuberculosis on five other cattle. The investigation covered a period of fifteen months. The experimental infection was conducted on seven head of young healthy cattle, eight to twelve weeks old, which had not reacted to tuberculin. Inoculations were made from human tubercular material directly and after its passage through guinea-pigs. Thus it has been demonstrated that the tubercular material derived from human sources was virulent for two cattle. *Case I.*—Continued severe, feverish, general ailing. The severely diseased experimental animal was killed 52 days after inoculation and found to have tubercular infiltration at place of inoculation, peritoneal and pleural tuberculosis, extending from point of inoculation, as well as embolic tuberculosis of lungs, liver and spleen. *Case Va.*—Continued severe, feverish, general ailing. Death occurred 37 days after the inoculation. Extensive tubercular infiltration, at point of inoculation, including the respective lymph glands. Acute miliary tuberculosis of the lungs, lobar catarrhal pneumonia, miliary tuberculosis of the liver, spleen, and kidneys. In the case of the (two) cattle the tubercular material from human sources proved virulent to a mean degree. *Case II.*—Transient, feverish, general ailing; killed 64 days after inoculation, pleural and peritoneal tuberculosis, extending from point of inoculation. *Case Vb.*—Transient, feverish, general ailing; killed 6 months after inoculation; typical peritoneal tuberculosis, extending from point of inoculation. In the case of the (three) cattle, the material showed slight virulence or totally avirulent.

*Case IIIa.*—Transient, feverish, rise of temperature ; killed 106 days after inoculation. Aside from a tubercular infiltration about the size of a walnut at the point of inoculation and infection of the adjacent lymph glands, no trace of tubercular infection. *Case IIIb.*—Slight rise of temperature in the evening. Killed 132 days after inoculation. No trace of tubercular infection. *Case IV.*—Slight rise of temperature in the evening. Killed 112 days after inoculation. No trace of tubercular infection. The tubercular material of cattle inoculated into (five) young cattle proved very virulent in one case, medium in two, and slightly virulent for the remaining two. Eber concludes from his experiments that the method of inoculation and the number of active tubercle bacilli contained in the transmitted material, as well as age and resistance of the individual animal, play an important rôle. Through intraperitoneal inoculation, human tuberculosis may be transmitted to cattle and cause the typical form of serous tuberculosis. In the light of these experiments, the view advanced by Koch that human tuberculosis is different from that of cattle, can no longer be maintained.—(*Beiträge zur Klinik Tuberkulose.*)

ETIOLOGY OF CONTAGIOUS PLEURO-PNEUMONIA AND SIMILAR DISEASES OF THE HORSE [*Tartakowsky*].—The author concludes from his observations, that contagious pleuro-pneumonia of the horse is a specific disease from the group of the so-called hæmorrhagic septicæmias. With the latter disease complications not infrequently occur by means of secondary infection through the streptococci of strangles. Simultaneously with contagious pleuro-pneumonia produced by the coccus bacilli of hæmorrhagic septicæmia, there appear isolated diseases and whole epizootics, which, according to their character, on the one hand, closely resemble contagious pleuro-pneumonia, and on the other pharyngo-laryngitis, described by Dieckerhoff under the name of scalma. Strangles of the horse is a serious epizootic, characterized by great diversity in localization as well as in the process of the disease. Strangles produces no immunity. In the course of the epizootic the streptococci of strangles acquire great virulence and can directly produce pneumonia, pleuro-pneumonia, and septicæmia. The only remedy for contagious pleuro-pneumonia from the group of the hæmorrhagic infections is the use of the specific serum. As the hæmorrhagic infections are frequently associated with strangles, then both specific sera must be used or a specially prepared bivalent serum. Until a distinction is established to a certainty between

contagious pleuro-pneumonia and influenza, we must retain the old name "influenza," and for the present differentiate (1) influenza as a slight form of disease of a feverish character with complications of the nervous system, the eyes, the sheaths of tendons, the intestines; and (2) contagious pleuro-pneumonia as a pure form of pleural disease. As regards the streptococci infection, we must place strangles under the designation "strangles and its complications."—(*Archiv. Veterinarnych Nauk. Buch 11 and 12.*)

### BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

CONTRIBUTION TO THE TREATMENT OF CONGENITAL ARTHRITIS OF THE STIFLE IN THE COLT [*G. Mulhe*].—After a few remarks on the etiology and symptomatology of the affection, and a consideration of the usual treatment, the author, after relating his failure in three cases upon animals of great value, records three others where he modified the classical treatment which had always given him poor results. This modification consisted in the injection into the joint of a solution of tincture of iodine. At first he used one part of the tincture, three of water, and a sufficient quantity of iodide of potassium. Forty-five cubic centimetres were introduced into the joint in two cases. In a third case the solution was made weaker by the addition of three more parts of water. The synovia was left in the sac. In the first animal an improvement was very noticeable. The arthritis existed only on one leg. In the second both stifles were diseased; 40 c.c. of the solution were injected in each. Result, great improvement, almost recovery in one leg, none on the other. The third case received only 25 c.c. of the weaker solution, and after two months the animal was entirely well. The author recommends careful exercise only after all bad conditions of the joint have subsided.—(*Annales de Bruxelles.*)

ENORMOUS VARICOUS TUMOR SIMULATING AN INGUINAL HERNIA IN A HORSE [*G. Nadelz*].—This colt is two years old; back of the cicatrix of castration in the right inguinal region he has a tumor as big as a large fist, elongated from forward backwards, soft, painless, and giving to the touch the sensation of a diffuent mass, enclosed in a cavity with flabby envelopes, and in which is felt a mass quite soft and rather movable. The

whole is covered by a soft skin. The tumor is not reducible. The history of the case is that the swelling made its appearance more than a year ago, subsiding after castration, returning some three months later, since when it has been increasing. It has never seemed to cause any inconvenience to the animal. As rectal examination fails to confirm the supposition of the presence of a hernia, a diagnosis of hæmatoma is made. At the operation, on opening the sac, where the mass is enclosed, it is found that it is continued behind by a very large and knotty vein and that in front it is continuous to eight other veins of medium size. Ligatures are applied upon each one of the bloodvessels, and the tumor removed. It makes a mass, cylindrical in shape, 20 centimetres long, 8 wide. The wound is treated by daily antiseptic washings.—(*Annales de Bruxelles.*)

CASE OF RADIAL PARALYSIS IN A DOG [*Prof. Hebrant*].—Hurled by a tramway, this animal shortly after the accident, although he has no fracture, dislocation, nor wound, became very lame in the right fore leg. He presented the following conditions: standing at rest the dog keeps his leg up, flexed at the knee, with the palmar face of his paw looking upwards and backwards. The elbow is dropped, the forearm is carried forward, and the scapulo-humeral angle extended. In walking, the metacarpi cannot be extended and the toes cannot rest on the ground; the anterior face of the claws rub against it. At a fast gait the animal touches the ground with the anterior face of the knee, where the skin is excoriated. The olecranon muscles are atrophied, as well as the extensor muscles of the forearm and paws. There is no sensation to the prick of a pin in the skin, or in the muscles of the forearm. The treatment suggested is electricity, but is applied for only a short time, when the animal is destroyed. At the post-mortem there is found: atrophy and degeneration of the olecranon muscles, of the extensors of the metacarpi and phalanges. The radial nerve is also atrophied, being only of the size of a fine thread. The superior brachial ganglions are enlarged, and form a black hard mass, which press upon the nerve, and are the cause of the nervous degeneration.—(*Annales de Bruxelles.*)

PSEUDO-PERICARDITIS AND TUBERCULOUS PULMONARY ABSCESS IN A COW [*Prof. Lienaux*].—This animal was brought to the clinic of the author presenting all the symptoms of pericarditis with effusion. There was bilateral dullness on percussion in the region of the heart; the normal sounds were absent; also the beatings of the organ; the swelling of the jugulars was well



marked and the œdema of the maxillary space and of the dewlap quite large. After a few days this last swelling began to diminish; the dullness was more marked and higher on the right than on the left side; the normal sounds of the heart were well heard and the cardiac beatings well felt. Consequently there was no exudation in the pericardium. Notwithstanding a negative test with tuberculin, a diagnosis of tuberculosis was made, which was proven correct at the post-mortem. A large abscess, the size of a man's head, was found occupying the cardiac lobe of the right lung. There were also caseous centres in other parts of the lung as well as in the bronchial glands.—(*Annales de Bruxelles.*)

TWO CASES OF VERTEBRAL TUBERCULOSIS IN BOVINES [*Ernest Gueldre*].—Lately vertebral tuberculosis has been the object of special study. The author has observed two animals affected with this disease—in one the lesions existed on the last cervical vertebra, in the other on the second dorsal. In both cases the disease started by a special symptom, which, although it has already been mentioned, has not yet received the special attention it deserves. This symptom consists in the diminution of the movements of the neck, and principally the act of lowering. The animal does not eat at pasture, says the owner. In the first case this symptom was the only one observed by the owner. Tested with tuberculin, the cow was found tuberculous and slaughtered. At the autopsy, besides pulmonary lesions, a tuberculous mass as big as a hen's egg, was found to have invaded the bodies of the last two cervical vertebræ. In the second case, where the symptom of difficult lowering of the neck was observed by the owner, some clinical symptoms present left no doubt as to the nature of the trouble. At the post-mortem the thoracic organs and the liver presented tuberculous lesions of various aspects. The superior third of the ninth left rib was softened and invaded by tuberculosis. The second dorsal vertebræ was also extensively diseased, the body and the spinous process as well as the medullary canal being involved.—(*Annales de Bruxelles.*)

JAMES H. HESTER, V. S., Santa Barbara, California, is an important breeder of red Ayrshire cattle.

WE regret to learn of the death on Feb. 17, of Mr. Edward Tonkin Dobbins, second vice-president of the well-known drug manufacturing house of John Wyeth & Brother (incorporated), of Philadelphia, Pa.



## CORRESPONDENCE.

### THE RECENT SPLENDID AGRICULTURAL WEEK IN NEBRASKA.

ST. ANTHONY PARK, MINN., February 1, 1906.

#### *Editors American Veterinary Review:*

DEAR SIRs: It was recently my privilege to attend a rather remarkable agricultural convention at Lincoln, Nebraska. This convention included a joint session of the American Breeders' Association, Nebraska Live Stock Breeders' Association, Nebraska State Dairymen's Association, Nebraska State Veterinary Association, Nebraska State Board of Agriculture, State Beekeepers' Association, and State Horticultural Society.

The credit of bringing these associations together and of organizing this magnificent convention, is very largely due to a veterinarian, who should have public credit for it, our old friend, Dr. A. T. Peters.

Here was a gathering in which there was perhaps 2000 people, all interested in veterinary medicine and agriculture. Their programme contained the names of prominent men from all over the United States and Canada, including a considerable number of eminent men from the Department of Agriculture.

Our friend Peters was always on hand, answering innumerable questions pleasantly, and looking after details in everything—from feeding the multitude to arranging programme material—a sort of general secretary without his name on the programme as such.

I found that he had recently moved into new and very pleasant quarters, in a new University building on the Agricultural College grounds, where he will have offices and laboratories.

The State Veterinary Association meeting, held in connection with these other associations, was well attended and a pleasant and profitable meeting. A very enjoyable banquet was given on the evening of January 15th. Every face looked a picture of well-fed contentment when we adjourned.

While at this meeting I also learned that Nebraska veterinarians were taking quite a prominent part in agricultural association and institute work. Dr. Jensen, of Weeping Water, has been doing Farmers' Institute work in the State. Dr. McKim, State Veterinarian, gave a valuable address on "Tuberculosis Among Swine," before the Nebraska State Swine Breeders' Association, and opened the way for a lively and very much needed discussion of this subject.

M. H. REYNOLDS.

OPERATIONS FOR STRANGULATED INGUINAL HERNIA IN STALLIONS—REPLY TO DR. GALBRAITH.

WASHINGTON C. H., OHIO, February 19, 1906.

*Editors American Veterinary Review:*

DEAR SIRs:—In the February number of the AMERICAN VETERINARY REVIEW, is an article by Dr. W. C. Galbraith (read before the Illinois Veterinary Medical Association) on the subject, "Strangulated Inguinal Hernia in Stallions."

In the first paragraph he asks the question, "Can this operation be performed successfully without leaving the horse a gelding?" and then goes on and describes the symptoms, anatomy of parts, and the *modus operandi* of an operation.

The writer practices in a great breeding district, and many are the stallions that have died from this difficulty with and without operations, before an *accidental* surgical operation led to the discovery of a method, which we have often spoken of to others, but have never taken the time to write about. I do not know that this particular method is original with me, but can say I have never met any one who has read a single line describing it; and if it should be original, I have no patent on it.

*Operation.*—Cast the horse by any apparatus in which the hind limbs can be well spread apart. Raise the buttocks as high as possible, and the patient propped nearly on its back, with the hernia side uppermost. Chloroform completely and be sure your assistant attends to that part and not to what you are doing, and keeps the patient well under anæsthesia. Spread the hind limbs by forcible traction, such as tying one to the barn floor and the other to something up a few feet. Use copious rectal enemas and see that as much of the colon is emptied as you can. Now use right or left arm as the occasion may demand; pass it into the rectum and find the imprisoned intestine, passing through the internal inguinal ring; grasp it carefully, and draw downwards, with steady, constant traction; while at the same time the other hand is pressing the testicle in the direction of the inguinal canal. Don't get in too much of a hurry, but keep up a rational amount of force, and first slowly and then all at once, testicle and intestine will slip into the abdominal cavity.

Allow the anæsthesia to well pass away before the patient is permitted to rise, and then place him where he cannot lie down.

After-treatment will depend on circumstances.

I have never been able to reduce hernia without anaesthesia.

I have met only one case where this method failed, and then I adopted the following: An incision was made as high in the groin as I could, right over the hernia; each half of a small bitch parturition forceps, was passed into the inguinal ring, handles attached, and then spread. I made the opening large enough to reduce the hernia, and the animal is still alive, but whether I tore, or simply stretched the parts, I do not know.

Let me report one particular case, occurring in 1899 or 1900, and which I select because it was a long way from here and was the patient of another veterinarian.

Stallion was being driven from one town to another, as was usual weekly. Was taken sick and treated by a local horse-doctor for colic. After some time, animal getting no ease, Dr. W. H. Turner, of Amherst, Ohio, was called and soon diagnosed a strangulated inguinal hernia. I happened to be about ten miles away and Dr. Turner came and asked my assistance. By this time we plainly had a scrotal hernia, and of several hours' existence. Animal was cast as described; and Dr. Turner administered chloroform and I manipulated the hernia. With some difficulty it was reduced and animal allowed to rise. I never saw the patient afterwards, but Dr. Turner cared for him and stated that he suffered from slight intestinal inflammation, but was moved six or eight miles to his home the next day; made an excellent recovery and is still standing in the stud. One laughable incident is that the same season of the accident the horse took first prize in his class at the county fair; no one noticing he had but one testicle in his scrotum.

Please remember that a country veterinarian's operations are not performed in a warm sanitary hospital, but oftentimes on a dung pile, with the most needed instruments miles away.

WM. H. GRIBBLE.

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THE ALLEGED POISONING OF BARON HAUSEN-AUBIER'S CATTLE BY BOVOVACCINE.

NEW YORK, February 10, 1906.

*Editors American Veterinary Review:*

DEAR SIRs:—In the January issue of the AMERICAN VETERINARY REVIEW, we find, under the heading of "Correspondence," a *résumé* of the present status of vaccination against tuberculosis of cattle, in which mention is made that Baron Au-

bier-Sudnicken reported his experience with Behring's vaccination in the *Deutsche Tierärztliche Wochenschrift* (November 25th, 1905), that he had 120 calves vaccinated each year for two years, and now advises strongly against Behring's vaccine, saying that his calves had been actually poisoned. A similar information appeared some little while ago in a German illustrated agricultural paper, to which Count Schwerin replied promptly, that if there had been any poisoning, it must have been due to a totally different cause and not to the bovovaccination. We have referred this matter at once to the Behringwerk at Marburg, and Dr. Römer, who recently lectured in East Prussia, has investigated the matter mentioned in your valued paper, and the Behringwerk wrote us to-day as follows:

"To-day Dr. Römer returned; he has ascertained, that the animals of Baron Hausen-Aubier-Sudnicken, which were said to have been poisoned through the bovovaccination, had at the time been infected with pneumonia. Here, therefore, the same mistake has occurred which has been made by others. That not much value should be attached to the remarks of Baron Hausen-Aubier is evidenced by the fact, that the Board of Agriculture of East Prussia—to wit, the same Board of which he himself is a member—has unanimously resolved to introduce bovovaccination."

You will therefore see, that the so-called "poisoning" is not due to bovovaccination, but to entirely different causes, and we would thank you to kindly give this information publicity in the next issue of the *AMERICAN VETERINARY REVIEW*. Thanking you in advance for the courtesy, we remain,

Yours very truly, C. BISCHOFF & Co.

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DR. PRICE, St. Paul, was recently elected President of the Minnesota State Veterinary Association, and Dr. Mack, of Stillwater, Secretary.

DR. JAMES SOMERS, San Juan, Cal., contributes this story to the *Western Veterinarian* for January: During the past autumn he was called to see a case of dystokia in a cow. Upon arriving at the dairy, and having made an examination of the patient, he found two hind feet presented, but upon passing his hand up between them he failed to locate a pelvis. Further examination showed that his hand was between two calves. The owner and his men had been applying traction on a hind leg of each calf, with, of course, negative results. Having straightened matters out, delivery was effected in a few minutes.



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**BIBLIOGRAPHY.**

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**SURGICAL DISEASES OF THE DOG AND CAT**, with Chapters on Anæsthetics and Obstetrics. By Frederick T. G. Hobday, F. R. C. V. S., etc. Second edition, revised and enlarged. Chicago: W. T. Keener & Co., 90 Wabash Ave. 1906.

In the above book, we have really a second edition of "Canine and Feline Surgery," by which title the first edition was known. Prof. Hobday has greatly improved his maiden effort, and in its present form presents a guide to the treatment of surgical diseases in the small animals which easily outranks anything in the English language. The introduction of practical antisepsy since his first edition, and the more rational employment of anæsthetics has provided much room for improvement in the technic of the procedures described in the original work, and the author has certainly taken advantage of his opportunities. The work is up to date in the description of the most advanced means of treating disease and of supplying artificially parts that disease or accident have removed—such as glass eyes, artificial teeth, artificial legs and feet. The chapter on obstetrics is very valuable to the surgeon, as it not only is a practical guide to the methods of procedure in dystokia, but is calculated to give his readers courage, as it contains excellent photos of well-developed and healthy individuals and even litters that were brought into the world through hysterectomy. The system of photographing actual patients in preference to furnishing fanciful drawings is much to be commended. One point it insures is the use of a high class calendered paper in order to get the effects in producing half-tones, and in the case of the work under review the quality of the paper and printing are beyond criticism.

Messrs. W. T. Keener & Co., 90 Wabash Ave., Chicago, will furnish this excellent treatise at \$3.25 net.

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THE health of Dr. W. L. Williams, of the New York State Veterinary College, is better this winter than for a number of years.

MR. E. J. SULLIVAN, New York State Veterinary College, 1906, has rented the hospital of Dr. T. S. Childs at Saratoga Springs, N. Y., and will open it for business on graduation. He is a resident of the Spa and has a large acquaintance with those having to do with horses. Dr. Childs is now a resident of New York City, where he holds the position of veterinarian to the American Society for the Prevention of Cruelty to Animals.

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## SOCIETY MEETINGS.

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### IOWA VETERINARY ASSOCIATION.

The eighteenth annual meeting was held in class-room of the Veterinary Department of Iowa State College, Ames, Iowa, January 9-10-11, 1906.

President S. H. Bauman and both Vice-Presidents P. Malcolm and W. H. Austin being absent, Dr. T. A. Shipley called the meeting to order at 10 A. M.

President Bauman being sick, there was no President's address. Secretary announced card system of registration.

The Secretary made a motion that the minutes as published in the March, 1905, AMERICAN VETERINARY REVIEW be adopted as published. Carried.

The Secretary then submitted his report, as follows :

#### REPORT OF THE SECRETARY.

*Mr. President and Members of the Iowa State Veterinary Medical Association :*

"The past year has brought forth nothing of special importance to the Association in this State. There is some legislation needed, and now is a good time to think about the matter and try and get ready for the present session of the State Legislature.

"In reviewing the work done by your Secretary, I will say that after the meeting last year, statements of accounts were sent to all who had not paid their dues, either before or at the meeting. Only a few responded and there are a good many members in arrears a couple of years. This should not be. All should make it a point to keep dues paid up.

"The minutes of the meeting were rewritten and sent to the AMERICAN VETERINARY REVIEW, which kindly published them, and a copy of the magazine is offered here to-day as the minutes of our last meeting.

"Committee appointees were notified and requested to get busy.

"At the meeting of the Iowa-Nebraska Association at Omaha in October a number of members were seen and a few of those on the programme to-day there promised to help entertain you.

"In response to the circular letters sent out first a few promised papers. In that letter all were requested to try and see some one not a member near him and see if he would become

one of us. It is hoped that a number acted on the suggestion. This Association should have at least 175 members in good standing, and this number will be reached if every member would try and get one new name.

"By mistake, the dates for the meeting were announced as January 11-12-13. Dr. McNeil called my attention to the mistake, and that is why the cards were mailed to all. Personal letters were sent to all in arrears over two years reminding them of their standing and requesting them to pay up. Those that fail to do so should by action of the Association be suspended from membership.

"The mailing of programmes was delayed by apparently unavoidable reasons."

#### TREASURER'S REPORT.

The report of the Treasurer was read, as follows:

<i>Receipts.</i>		<i>Disbursements.</i>	
To Cash on hand 1-25-05..\$	13.70	By Cash, F. W. Meyers,	
" " for dues 1-21-05 to		postage . . . . .	\$ 20.50
1-6-06 inclus. . .	102.00	" " Review Publish.	
" " " Membership fees		Co . . . . .	9.25
to 1-6-06. . . . .	22.00	" " Bulletin Publish.	
		Co . . . . .	3.75
		" " H. Pester, Sten-	
		ographer . . . .	8.00
		" " H. C. Simpson,	
		Sec'y . . . . .	25.00
		" " H. A. Carpenter,	
		badges . . . . .	13.40
		" " H. C. Simpson,	
		edit. proceedi'gs	20.00
		" " S. H. Bauman,	
		stationery . . . .	3.50
		Cash in Treasurer's hands	34.30
	<hr/>		<hr/>
	\$137.70		\$137.70

A committee of three were appointed to audit the Treasurer's report (S. K. Hazlet, J. W. Griffith and L. U. Shipley), who found the report correct, and were discharged.

Dr. G. L. Buffington, being the only member of the Board of Censors present, the President appointed Dr. W. A. Stuhr to fill place of Dr. D. H. Miller and Dr. James Dixon to fill place of Dr. C. E. Stewart.

Dr. S. Whitbeck being called on, addressed the Association on, "Our Very Best," calling for higher citizenship, conduct more becoming professional men.

## NEW MEMBERS ELECTED.

The report of the Board of Censors was read and accepted, and the following were elected to membership, the Secretary casting the vote of the Association :

S. M. Hunt, D.V.M.  
C. P. Liegerot, D.V.M.  
Albert Beck, M.D.C.  
John D. Stillwell, D.V.M.  
Wm. Readhead, V.S.  
John A. Anstey, D.V.M.  
Ward S. Hunt, D.V.M.  
R. R. Dykstra, D.V.M.  
Henry Hell, V.M.D.  
G. U. Giese, M.D.C.  
P. A. Aagesen, Copenhagen.  
Frank L. Roach, M.D.C.  
D. C. Murdock, M.D.C.

Dr. F. H. P. Edwards, Chairman, read the report of the Committee on Disease and Treatment, as follows :

## REPORT OF COMMITTEE ON DISEASE AND TREATMENT.

"Your Committee on Disease and Treatment have been somewhat handicapped in not knowing exactly what were its duties, and, having no previous report to refer to, had no guide as to where to begin or where to end. Consequently your Chairman, after corresponding with other members of this committee and getting their opinions, decided that each member report some cases that have occurred in his practice that he considered of interest, thus making the report of interest to all. I regret to say that up to the time of my leaving home only two reports had reached me, so this report will only occupy a very brief time, which, after looking over the very lengthy programme, I consider a good thing.

"There has been, as near as I could find out, no unusual outbreak in Iowa of any new diseases, nor any serious outbreaks of any of the well-known diseases. Distemper, both in horses and dogs, has prevailed more or less all year, and in the community where I live, in the dog it was very fatal last winter and early spring, and left quite a number of cases of chorea and epilepsy in the patients that lived.

"Tuberculosis, the ever-successful subject to cause a discussion, has been with us all the time, and at present let us hope that the experiments of von Behring and others along the line



of preventive vaccination may prove a bigger success than it even seems to be. I notice quite recently in some towns in Iowa the boards of health have made it compulsory to report all cases of tuberculosis found in the public schools, and some have gone so far as to suggest that no person known to be suffering from tuberculosis of the lungs be admitted to the public schools.

"In connection with the subject of this Committee, I might mention the revision of the Pharmacopœia of the United States. To those who have not seen the new work would refer them to the September number of the REVIEW, where they will find a brief but concise synopsis of the changes of interest to veterinarians.

"Your Committee suggests that for the future this Committee be dropped and each member in attendance at meetings consider himself a committee of one to report cases of interest."

Dr. J. W. Griffith, of Cedar Rapids, submitted his section of the report of the Committee on Diseases and Treatment, on "The Use of Glyco-Heroin in Veterinary Practice." It was as follows: "I will give a few cases that came under my care and the results following the use of Glyco-Heroin in pneumonia and influenza.

"*Case No. 1.* — Jack, four years old, influenza. Having lost a jack the day previous with the same symptoms and the use of ordinary treatment, I decided to use Glyco-Heroin. Temperature  $104\frac{1}{2}$ , both lungs congested; weak, wiry pulse; respiration rapid, breath foetid; refused food and water. Gave Glyco-Heroin,  $\frac{3}{4}$  ij; tincture nux vom., 3 ij, followed by Glyco-Heroin,  $\frac{3}{4}$  i, nux, 3 i, every three hours. The following day temperature 103, general improvement. Fifth day temperature 102, sixth day 100-2/5. Nux discontinued after third day and beer given in pint doses three times daily. Jack was sold and shipped on the eighth day.

"*Case No. 2.* — Sorrel gelding, 10 years old, pneumonia. Temperature 105, both lungs congested and rapid pulse; respiration labored; refused food and water. Glyco-Heroin  $\frac{3}{4}$  ij; tincture nux vomica, 3 i every three hours; acetanilid grs. xxxx, three doses during the day. Second day, temperature 102; marked improvement; drank water, ate small bran mash and a little hay. Third day, temperature 100, improvement rapid from that time. This horse is in use every day at the present time.

*Case No. 3.* — Bay gelding, weight 1650; had worked all day on a day. Called at 8 P. M.; animal had refused to eat;

every indication of pneumonia; temperature  $104\frac{1}{2}$ ; Glyco-Heroin,  $\text{℥ ij}$ , every three hours. Horse put to work next morning.

"*Case No. 4* — Bay mare, weight 1300; worked all day; called at 8.30. Mare had refused to eat; indications of pneumonia; temperature 104, Glyco-Heroin  $\text{℥ ij}$ , every three hours. Horse ready to work the next morning.

"Have had very satisfactory results in using Glyco-Heroin in laryngitis and catarrhal fever. In distemper in dogs the results have been quite satisfactory; however, it has given the best results in relieving the cough that usually follows as a sequel of distemper, allaying irritation in the larynx and bronchi."

Dr. Peter Malcolm, of New Hampton, another member of the Committee on Diseases and Treatment, submitted the following:

"In the horse we have been troubled with cerebro-spinal meningitis, strangles, and purpura hæmorrhagica. With cerebro-spinal meningitis, of which there were five outbreaks, the peculiarity of the cases was that they were all isolated, with but one exception, and in this there were three horses and two cows, kept in the same barn. Two of the horses became affected. The cause could be attributed to impure water and bad drainage. As treatment, gave a cathartic, followed with heart stimulants and diuretics; disinfected barn and changed the drinking water. Mortality: two of six died. Nothing strange in regard to strangles, only the unusual number of cases, the severity of them, and the bad effects following, especially purpura hæmorrhagica in its worst forms. In the treatment of purpura hæmorrhagica, boric acid seems to be a good agent, on account of its antiseptic action on the alimentary tract, salivary and sweat glands, and also for its diuretic action.

"In cattle, contagious keratitis appeared to be unusually prevalent this year. In this disease there seems to be a difference of opinion as to its pathology, some claiming it is a local and others a constitutional disease. Considering it a constitutional disease, I have directed treatment along those lines, with very good success, as follows: Give in drinking water once a day hyposulphite of soda,  $\text{℥ ij}$ , for seven or eight days. Apply in and around the eye once a day, boric acid,  $\text{℥ i}$ ; belladonna fluid ex.,  $\text{℥ ij}$ ; aquæ, Oij.

"Blackleg seems to be on the increase, at least in Chickasaw County, for in 1904 there were only five outbreaks that I heard of and in 1905 there were nine, and I know of two or

three herds where the owners did their own vaccinating. In diagnosing this disease we should be very careful, and not depend upon the owner's symptoms, as they always think when an animal dies suddenly it is blackleg. Do your own diagnosing, or you may find you have vaccinated a herd for blackleg, and they die of hæmorrhagic septicæmia, or that much-talked of 'corn-stalk disease.'

- "There were three outbreaks of hæmorrhagic septicæmia, two in Chickasaw County and one in Winneshiek. This is no new disease, but there is but little literature I could find. The best description of the disease can be found in bulletins issued by the Minnesota Station about one and one-half years ago. You may be somewhat disappointed in the post-mortems, for in all cases the lesions are not so well defined as you would expect to find from the loathsome appearance of the animal and the sudden death, which accounts for the difference in the symptoms and the appearance of animals affected. Generally under the skin, around the pharynx and larynx, will be found a congested area; in others this does not appear and the only lesions found are in the lymphatic system; in others the only trace of the disease can be found in the mesenteries; in others the heart seems to be the only organ affected, but in all cases there will be found those dark congested areas peculiar to the disease.

"Tuberculosis—well, it is here, and we report on it every year, and it is on the increase, and will increase until the farmer and the legislator get together and do something to stamp it out. They have seen it work its way through the human family, and have been told and are beginning to believe it is working in the ox tribe and maybe in the hog, dog and cat. And if we ever get the old maid to thinking her kitty is in danger, we may make some impression on the legislature."

The report was discussed by Dr. P. O. Koto, who spoke of hæmorrhagic septicæmia as being on the increase in the Northern part of the State. The report was accepted and the committee discharged.

#### READING AND DISCUSSION OF PAPERS.

Dr. R. R. Dykstra read his paper on "Disinfection."\*

Contagious abortion being brought up, was discussed by Drs. Wm. Drinkwater, R. R. Dykstra, W. A. Stuhr, P. O. Koto, C. E. Stewart and G. W. Walrod, the latter of whom quoted very satisfactory results with his treatment, as follows: Bichloride of mercury, 1; glycerine, 8; alcohol, 8. 3 xij in 1 gallon

\* Will be published in an early number of the REVIEW.

of water; 1 pint of solution into vagina to those that have aborted.  $\frac{3}{4}$  ij in 1 gallon of water; 1 pint of solution into vagina to those that haven't. Some of these act as if they intended to abort, but none have. Also used general antiseptics around premises. Had eradicated the disease in a number of herds by this treatment and in two herds was giving a treatment once a year as a preventive.

Drs. D. H. Miller and P. O. Koto believe that some herds get well without running usual course and without any treatment.

Dr. W. A. Stuhr suggests to use antiseptics so as to keep field clean of infection and to let the animal produce its own toxin.

Dr. Malcolm used local antiseptics. Hyposulphite of soda  $\frac{3}{4}$  ij twice daily. Carbolic acid and glycerine in water sprinkled over hay. Had fair results.

In contagious scours, Dr. D. H. Miller secured good results from tannic acid, 2; prepared chalk, 3; lime water, 1; 1 or 2 twice daily and had good results. Dr. J. W. Griffith used bichloride, 1 to 500, internally and externally. Dr. W. A. Stuhr reports von Behring as using formaldehyde, 1 to 10000 to 25000, in milk and feed. The milk is much more readily drank than water. Also 1 to 500 to wash navel.

Dr. C. E. Baxter being absent, the Secretary read his report or "Chronic Tympany in a Bull."\* Discussed by Dr. G. W. Walrod, who reported a similar case that post-mortem showed to be tubercular. Dr. Hal C. Simpson reported a case in a calf, three months old. Owner reported that on post-mortem there was an abscess on the vertebræ just back of the diaphragm. Drs. W. A. Stuhr and T. A. Shipley reported that tuberculosis was always to be suspected in those cases.

Dr. J. H. McLeod being absent, the Secretary read his report, "Staked,"\* which was discussed at length.

Dr. T. A. Shipley reported the removal of what seemed like blood-clots from the sheath of a horse. No hæmorrhage at time; twenty-four hours after operation was exercised and bleeding began, and after 48 hours was still worse. Finally recovered.

Dr. C. E. Stewart reported a case of ergotism.

Dr. P. Malcolm reported cases in cattle; condition similar to ergotism. No ergot was found on examination, but a great many small sprouts of possibly a second growth of ear-corn.

\*Will be published in an early number of the REVIEW.



Symptoms were loss of control of hind parts and depression of circulatory system with diarrhoea. Post-mortem showed lack of blood in extremities and in liver. On removal from field others recovered. Thought possibly a toxin found in the corn or produced by it.

Dr. Griffith reported case of ptomaine poisoning in cattle in which all affected animals died. Symptoms: Similar to dumb rabies; impaction and diarrhoea, was found in all kinds of cattle in feed-yard, stock cattle and milk cows.

Dr. D. H. Miller reported case in cattle and horses of bronchitis caused by beards of squirrel-tail grass being inhaled into lungs and found on post-mortem.

Dr. S. S. Whitbeck reported cases of weakness in horses, run down, urine alkaline, refusal of feed. Treatment so far unsuccessful.

Moved to adjourn till 8 o'clock in the morning at Stock Pavilion, and 10 o'clock here. Carried.

SECOND DAY—WEDNESDAY, JANUARY 10, 1906.

Meeting called to order by Vice-President P. Malcom at 10.30. Dr. George Judish, instructor in pharmacy, was called and read his paper, "Dispensing Hints."\* A great many valuable points were brought out. Many questions were asked and much discussion followed. It was moved that the Association extend a vote of thanks to Dr. Judish. Carried unanimously.

Dr. James Vincent reported case of colic showing slight symptoms for two days with slight flatus. Examination per rectum showed small colon very hard. Injections immediately thrown off. Tried injection through canula per rectum, not successful. Punctured flank and let off gas and then injected water, aromatic spirits ammonia and glycerine into colon. In 16 hours an immense amount of fæcal matter was passed and continued throughout the day. Recovered.

Drs. Blanche, L. U. Shipley, Griffith, Simpson and Heck reported injections through canula. Eserine was cussed and discussed.

Adjourned to meet at Pavilion at 1 o'clock, and 3 o'clock in hall.

Meeting called to order by Vice-President P. Malcolm at 3 P. M. Dr. C. J. Heckard read his report and showed specimen. The report was discussed.

\* Will be published in an early number of the REVIEW.

Prof. H. E. Summers made an excellent talk on "The Life History of Parasites." He chose a few and covered the subject thoroughly. The talk was listened to with a great deal of interest and a great many questions were asked. The Association extended a vote of thanks to Prof. Summers.

Dr. D. H. Miller reported how he was operating for poll-evil. Shaves mane, makes median line incision on superior part of neck, removes ligamentum nuchæ out clean, as far down neck as diseased, and particularly at superior attachment. If needed make one opening on side of neck for drainage; some hæmorrhage; pack and stitch up for 24 hours. Heals very rapidly. No after trouble and no fear of head hanging low.

Dr. J. H. Gain takes out part of the ligamentum nuchæ from under side, an elliptical slice; the remaining scar is not as large.

Dr. D. H. Miller reported on use of stomach tube in certain cases, one in particular with injured tongue. Gave food for ten days through tube. Horse lost an immense amount of flesh, but is now getting along fine. Stomach tubes were cussed and discussed. Some claim great difficulty in passing on account of being limber. A stiffer tube, such as a  $\frac{3}{4}$  inch garden tube, passes much easier and is just as satisfactory.

Dr. J. W. Haxby reported on "Chondroma of False Nostril." The report was discussed freely.

Adjourned to meet at 7 o'clock.

Called to order at 8 P. M. Letter from Dr. Gay was read and resignation was accepted.

Prof. H. L. Pammel, of Iowa State College, read his paper, "A Veterinary Training."\* The Association extended a vote of thanks to Prof. Pammel.

Dr. W. A. Stuhr read his paper on "Pathology and Treatment of Fever."\* This was a splendid paper, up-to-date, and is a subject of vast importance. Discussed fully by Drs. Wood, Griffith, Simpson, Heck, C. E. Stewart, S. Stewart, Malcolm, Hazlet and Vincent.

Adjourned till 8 o'clock to-morrow morning at the Stock Pavilion and 10 o'clock in lecture-room.

#### THIRD DAY—THURSDAY, JANUARY 11, 1906.

Called to order at 10.30 A. M. by Vice-President P. Malcolm. Dr. J. Miller, being called, reported a case of vesical calculus, with successful operation. The calculus was shown and was

\* Will be published in an early number of the REVIEW.

about the size of an average egg. The report was discussed by Drs. S. Stewart, W. Drinkwater, T. A. Shipley, S. K. Hazlet, and James Vincent.

Prof. C. F. Curtiss, Dean and Director of Division of Agriculture of Iowa State College, made a talk regarding the relation between the veterinarian and the stock breeders, farmers and stock handlers. He spoke of the necessity of an understanding between them. He gave a number of practical suggestions. A vote of thanks was extended Prof. Curtiss by the Association.

Dr. N. J. Harris talked in the interest of the American Horse Registry Association, which demands a veterinary certificate of soundness before registration.

Adjourned till 1 o'clock at Stock Pavilion, and 3 o'clock here.

Called to order at 3.15 by Vice-President Malcolm. Dr. T. A. Shipley, Chairman of Committee on Sanitation, read the report of the committee, as follows:

#### REPORT OF COMMITTEE ON SANITATION.

"Before making our report proper, I wish to call your attention to some of the difficulties this committee labors under. While there is certainly no lack of sanitary topics which we might discuss, there is a total lack of figures as to veterinary sanitary work in this State. The only published report that we know anything about relating to diseases of stock in this State, is the biennial report of the State Veterinary Surgeon, and the report rendered by the Resident State Secretary to the American Veterinary Medical Association. These are too ancient, when taken from cold type, to be of any interest or use to your committee, even if they did contain anything but glittering generalities, and of course you could not expect either of these sources to lend any of their hard-earned knowledge to this committee prior to the appearance of their report in print.

"As this is the third time your Chairman has served on this committee, you will pardon us for indulging in a few rambling preliminary remarks, after which we will give you the still more rambling and disjointed report. We promise you, if it does not evoke more discussion in this meeting, for or against, than previous reports, we want to warn your President to forever leave us off this committee, for we will be sorely tempted to step on somebody's toes hard enough to make them squirm some and get up a little excitement, even at the expense of harmony and good fellowship, which it has always been our endeavor to preserve; but it seems to us that these reports fall too flat and

every member seems to vie with the other in his ability to maintain silence on matters pertaining to veterinary sanitary science. Is it not so? Are you not co-partners with the general public in this apathy and inertia in these matters?

"Again, the official position of your Chairman as Federal inspector in one of the largest packing houses in the State, has in his possession some facts and figures that would be interesting, perhaps, but these facts and figures are not private property and are very zealously guarded by those in authority, and when they do finally appear in print, are also glittering generalities and more or less ancient so far as Iowa stock statistics are concerned. We have no doubt, though, that if there were any accredited State official or organization who desire to make use in a practical way of these statistics, by giving them a wide publicity, such as the State Board of Health now does in the gathering and publishing of vital statistics of the human family, that the Federal Bureau could be induced to coöperate with such organization or authority. In other words, publicity we believe to be the keynote to a betterment of sanitary matters in this, as well as many others, and the conditions which are revealed by a little investigation of some of the sources from which our condemned animals originate is so little known, much less understood by the general public, that they go on in blissful ignorance of anything being wrong. Moreover, it is usually useless to talk to a farmer about any possibility of the germs of the deadly disease lurking in his stock, which are in the pink of condition and are ready to turn into good hard cash. He is inclined to intimate that you are over solicitous regarding something that is none of your business, that you are looking for a job or trying to stir up some trouble; but it has frequently been revealed by tracing some of the worst bunches of tubercular hogs to their source of production, to find that the families of their owners and raisers have been visited by the same disease; yet they would not for the world have their neighbors know that their stock was so affected, as it would spoil the sale of it.

"Since the last meeting held by this Association, it has been the official duty of your Chairman to test a thoroughbred, registered, shorthorn bull intended for export to Canada. As you are all probably aware, the Federal Government tests all breeding cattle coming into the United States and have arrangements with Canada whereby the Inspector's certificates of either country are honored by the other. It is necessary to have a certificate of successful tuberculin test with temperature chart at-



tached in order to get across the line either way. This bull gave a typical reaction to the tuberculin test and of course was refused a certificate. But there our authority stops and he is still in Iowa, stabled in a basement barn along with some fine thoroughbred cows and their calves from this bull, and these calves retail to the breeders at from \$150 up, when a year old. This man does not have to have his herd tested. No State laws, rules or regulations interfere. They are plenty sound and good enough for all of the States in the Union, except four or five, but not good enough to get out of the country.

"Again, recently a load of 80 half blood Tamworth hogs - the kind that are so highly prized as bacon hogs, and they were fine specimens of their kind—were killed at the abattoir in Cedar Rapids. 52 of these hogs were tagged as tubercular and 21 so much so as to be tanked on final post-mortem examination. On a little special inquiry we learned that these hogs had been raised by a large feeder in the vicinity of a town containing one of Iowa's most famous seats of learning and culture. We did not learn whether the milk from this farm was furnished to the students of this institution or not, but it can be easily imagined that such is the case and that the havoc played by it will far exceed that of the football casualties so much heralded by newspapers of late. However, this subject is not nearly so exciting a theme for newspaper literature as football, social scandal, graft or war.

"It seems to your committee, however, that we are fast arriving at a situation where speculation is profitless and facts and figures are called for upon which to base some effective action for the treatment of conditions that prevail or we will find ourselves in a condition where we can neither withstand the disease or the treatment necessary for its cure; consequently we believe it is the duty of all veterinarians to consider some practical means to get the good work started, which we will now proceed to do in our report proper, in which we will consider tuberculosis only for reasons already stated.

"The legislative measures should require: (a) that it shall be compulsory for veterinarians to report, to State authorities, all cases of tuberculosis which come under their observation, on blanks furnished by the State; (b) that owners of tuberculous animals, which are dangerous for spreading the infection would receive financial compensation from the State and be slaughtered.

"We also recommend for the establishment of uniform

principles of judging tuberculin reaction the rules laid down by the 8th International Veterinary Congress as follows:

"1. The production of tuberculin and its distribution should be placed under government control.

"2. Such cattle only are to be submitted to the tuberculin test as those whose temperature at the time of injection does not exceed  $103.1^{\circ}$  F.

"3. In animals having a temperature at the time of injection below  $103.1^{\circ}$  F., a rise to  $104.2^{\circ}$  F. or over should be considered a positive reaction.

"4. A rise in temperature to  $103.1^{\circ}$  F., and not over  $104.2^{\circ}$  F. should be considered as a doubtful reaction, and every case is to be considered individually on its merits.

"We wish to call the attention of this body to an experiment made by the Bureau of Animal Industry as contained in the twentieth annual report.

"The chief object of this experiment was to determine the length of time and the per cent. of cattle that would become infected when placed in quarters with other animals having tuberculosis. The following statements are gathered from the report referred to.

"In this experiment seven healthy cattle and three tubercular cows were confined in a stable containing ten box stalls. The stalls were separated by solid two inch plank partitions six feet high. Five of the healthy cattle and the three tubercular cows occupied different stalls each day, in a rotation which exposed each of the healthy cattle equally to the three tubercular cows. Two of the healthy cattle occupied stalls near the centre of the stable, and were at no time allowed to enter any other stalls, or to come in closer contact with any of the other cattle.

"On April 10, 1903, one of the three tubercular cows was removed from the stable and two other and more severely affected cows were introduced. On June 12th, 1903, one of the latter died, and was found, on autopsy, to be affected with generalized tuberculosis. The four other tubercular cows used in this experiment are alive at this time (November 7th, 1903,) and three of these were so slightly affected with tuberculosis that the presence of the disease would have escaped the casual observer.

"Experiment commenced January 27th, 1903. The healthy cattle consisted of one yearling bull, one six-year-old cow, one heifer about eighteen months old, one six months old, one bull

calf same age, one heifer about four and one-half months old, and one cow two years old.

"From six to eight months after these cattle were submitted to the tuberculin test, autopsy revealed tubercular lesions, more or less well marked. The tubercular character of all doubtful lesions was confirmed by either microscopic examination or guinea-pig injections.

"It should be stated that one of these cows received one or more injections of virulent human tubercular bacilli and it is thought she became infected from this source.

"Granting that this is true it will be seen that at least six out of the seven exposed animals became infected in these few months and under conditions much less favorable for spreading the disease than is usually found in the ordinary stable of this country.

"It will readily be seen from this experiment that this disease spreads very quickly by inhalation and that no dairyman, farmer or raiser of fine breeding cattle can afford to retain a tuberculous animal in his herd.

"Many localities are already infected to an alarming extent and considerable financial loss has been sustained, but it is as nothing compared with what it will be unless some efficient measures are adopted by our law-making body to control this disease.

"Your committee recommend that this Association request the present legislature to enact a law requiring those who are known to have the disease among their stock to clean up and that they appropriate \$20,000 to partially compensate the stockmen who suffer the loss."

The report was discussed by Drs. J. W. Griffith, P. O. Koto, P. Malcolm, S. K. Hazlet and A. L. Wood.

#### NEW CONSTITUTION AND BY-LAWS.

Report of committee to draw up new Constitution and By-Laws was next read. The Secretary read the Constitution, which was adopted as read. The Secretary read the By-Laws, which were adopted as read. The Secretary was instructed to have same printed, to include a list of members and the fee bill, and to mail to each member, and others who may ask for same, a copy.

The Committee on Resolutions was next called, and reported as follows:

#### RESOLUTIONS ADOPTED.

"*Resolved*, That we, the Iowa Veterinary Association, be-

lieve that there should be a complete revision of the laws of our State relating to veterinary sanitation, and the powers and duties of the State Veterinarian and his Assistants, in the eradication of contagious diseases among domestic animals. Especially do we recognize that tuberculosis among cattle and swine is on the increase and that more stringent measures should be applied for its eradication, and that a most liberal spirit should be shown by the Legislature at its present session, in granting sufficient appropriations for carrying on this work.

"*Resolved*, That it is the sense of this Association, that the Legislature at its present session should be very generous in the matter of granting the appropriations asked for the use of the Veterinary Section of the Experiment Station at Ames, in order that comprehensive investigation may be made in reference to the nature, prevention and treatment of the many diseases of our domestic animals.

"*Resolved*, That the members of the I. V. A. extend a vote of appreciation to the Faculty of the College of Agriculture and Mechanics Arts, and especially to the Faculty of the Veterinary Department, for their royal entertainment and also for providing facilities for very valuable clinics."

"WHEREAS, The absence of our esteemed President, Dr. S. H. Bauman, is a source of regret to members of the I. V. A., owing to the fact that Dr. Bauman and family have been severely afflicted by sickness, being confined to their beds and home for the past four months suffering with typhoid fever, be it

"*Resolved*, That we, the members of the I. V. A., do extend to Dr. Bauman and family our heartfelt sympathy and hope for their speedy restoration to health, and be it further

"*Resolved*, That a copy of these resolutions be sent to Dr. Bauman and family.

"Committee" { P. O. Koto,  
L. U. Shipley,  
C. J. Heckard."

The report was accepted and the committee discharged.

Professors C. F. Curtiss, George Judish, L. H. Pammel, H. E. Summers and W. J. Kennedy, were elected to associate membership.

Drs. C. Gay, Fred N. Elwell, G. W. Scott, G. L. Noble, having resigned, were elected to honorary membership.

The resignation of Dr. S. Whitbeck was laid on the table.



## ELECTION OF OFFICERS.

The following officers were elected :

President—J. H. McNeil, Ames.

First Vice-President—D. E. Baughman, Fort Dodge.

Second Vice-President—L. U. Shipley, Sheldon.

Secretary-Treasurer—Hal C. Simpson, Denison.

Executive Committee—1 year, J. W. Griffith, Cedar Rapids ; 2 years, P. O. Koto, Forest City ; 3 years, W. A. Heck, West Liberty.

Drs. P. O. Koto and T. A. Shipley were appointed to hunt up President McNeil. They did so and he made a speech, in which he accepted and thanked the Association.

Dr. J. W. Griffith invited the Association to meet at Cedar Rapids next year. The place of meeting was left to the selection of the Executive Committee.

## THE ATTENDANCE.

*Members.* — W. A. Heck, West Liberty ; Geo. W. Blanche, Belle Plaine ; J. R. Sanders, Corydon ; Dr. and Mrs. S. Whitbeck, Decorah ; J. W. Haxby, Villisca ; D. E. Baughman, Fort Dodge ; E. G. Piper, Ida Grove ; P. O. Koto, Forest City ; J. H. Spense, Clinton ; J. S. Potter, Iowa City ; Wm. Drinkwater, Monticello ; W. W. Talbot, Oskaloosa ; W. S. Hunt, La Porte City ; Henry Hell, New Liberty ; P. Malcolm, New Hampton ; C. A. Bradley, Marion ; S. M. Hurt, Ames ; J. D. Stillwell, Paullina ; R. R. Dykstra, Ames ; L. U. Shipley, Sheldon ; D. H. Miller, 732-19th St., Des Moines ; C. G. Martin, Des Moines ; John A. Anstey, Massena ; H. L. Stewart, Lacona ; T. A. Shipley, Cedar Rapids ; Geo. M. Walrod, Storm Lake ; C. E. Stewart, Chariton ; H. E. Talbot, Des Moines ; Carl Olson, Sac City ; F. J. Neiman, Marshalltown ; H. A. McIntire, Maquoketa ; Henry Shipley, Sheldon ; S. K. Hazlet, Oelwein ; James Vincent, Shenandoah ; James Dixon, Tipton ; J. W. Griffith, Cedar Rapids ; A. L. Wood, Hampton ; E. E. Sayers, Algona ; A. Beck, Auburn ; G. W. Giese, Avoca ; J. H. McNeil, Ames ; B. F. Barber, Laurens ; A. Kaderback, Fort Dodge ; F. M. Roys, Manning ; C. J. Heckard, Wheatland ; F. L. Skrable, Toledo ; F. L. Roach, Preston ; G. L. Buffington, Brooklyn ; F. H. P. Edwards, Iowa City ; C. J. Hinkley, Odebolt ; W. A. Stuhr, Ames ; W. A. McClanahan, Redding ; S. Stewart (honorary member), Kansas City, Mo.

*Visitors.* — George Judish, Ames ; J. H. Gain, Lincoln ; L. C. Beaumont, Ames ; A. E. Wallace, Nevinville ; C. H.

Stange, Lowden; W. C. Stewart, Maynard; Paul P. Taylor, Randalia; C. B. Knowles, La Porte City; E. O. Thomas, Iowa City; M. P. Butzel, Chicago, Ill.; Perry A. Stanfield, Auburn, Iowa.  
HAL. C. SIMPSON, *Secretary*.

#### OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This Association convened for its twenty-third annual session, in the Laboratory Building, Veterinary Department of the Ohio State University, Jan. 16, 1906.

Meeting was called to order at 2 P. M. by President W. E. Clemons.

Dr. W. O. Thompson, President of the University, was on the programme for an address of welcome, but not being well was unable to attend; and this pleasure was forced to be dispensed with.

Minutes of the previous meeting were read and approved.

Roll-call showed the following members and visitors present, who, with the senior students of the Veterinary Department, made a very fine crowd; and undoubtedly we missed getting the names of many visitors:

*Members.*—F. E. Anderson, Findlay; J. L. Axby, Lawrenceburg, Ind.; W. A. Axby, Harrison; S. E. Bretz, Nevada; H. W. Brown, Columbus; J. C. Butcher, Lima; J. H. Blattenburg, Lima; O. V. Brumley, Columbus; L. W. Carl, Columbus; E. H. Callender, Zanesville; T. B. Cotton, Mt. Vernon; G. W. Cliffe, Upper Sandusky; Louis P. Cook, Cincinnati; W. E. Clemons, Greenville; W. R. Clark, Wauseon; A. H. Collins, New London; J. W. Choate, Columbus; Roy E. Davis, Toledo; Norton Dock, Cincinnati; F. H. Dettman, Troy; V. A. Dennis, Westerville; B. C. Eldridge, Swanton; J. D. Fair, Berlin; J. L. Faragher, Lorain; George Frese, Toledo; H. Fultow, Norwalk; C. B. Frederick, Canton; Paul Fischer, Columbus, Wm. H. Gribble, Washington C. H.; T. B. Hillock, Columbus; N. W. Hillock, Columbus; R. C. Hill, West Alexandria, E. R. Hinckley, Sandusky; W. R. Howe, Dayton; E. O. Hess, Elyria; C. E. Inskeep, Urbana; T. E. Jones, Newark; J. E. Johnson, Urbana; M. J. Jones, Jr., Blanchester; F. M. Jeffrey, Toledo; H. N. Jeffries, Greenville; George Kinsey, Wheeling, W. Va.; W. A. Kramer, Dayton; W. A. Labron, Xenia; C. E. Leist, Columbus; J. S. Lake, Portsmouth; E. C. Langdon, Sabina; H. M. Manley,

Dayton; L. H. Maynard, Columbus; S. D. Myers, Wilmington; J. A. Meagher, Glendale; R. J. Michener, Lebanon; E. L. Metzger, Louisville; M. C. McClain, Jeromesville; J. V. Newton, Toledo; E. L. Price, Circleville; Benj. Schmidt, Wapakoneta; L. Smalley, Loudonville; E. R. Stockwell, Mechanicsburg; Walter Shaw, Dayton, E. H. Shepard, Cleveland; F. F. Sheets, Van Wert; Sol S. Snyder, Springfield; C. H. Sater, Hamilton; L. A. Severcool, Elyria; W. J. Torrence, Cleveland; W. H. Turner, No. Amherst; C. H. Tiffin, Hillsboro; H. D. Townley, Cincinnati; D. H. Udall, Columbus; W. B. Washburn, Tiffin; D. S. White, Columbus; Jos. Wingerter, Akron; I. A. Wynn, Urbana; H. L. Williams, Newark; W. E. Wight, Pittsburg, Pa.

*Visiting Veterinarians.*—E. E. Bell, Nelsonville; W. D. Fitzgerald, Columbus; H. J. Hellwig, Elmore; G. C. Marver, Oak Harbor; J. P. Norton, Bellevue; L. C. Rider, Kenton; H. F. Sass, Toledo; W. Sanderson, Sidney; Benj. Studer, Columbus; C. W. Secoy, Athens; W. W. Tritschler, Cincinnati.

Quite a large amount of correspondence was read, but of only two letters was there need of special mention. (1) A letter from Dr. Sisson (who is sojourning in Berlin), containing his annual dues, and wishing the Association much success. Although so many miles away, the Doctor's letter reached us while we were in session. (2) A letter from Dr. Ruby, asking to withdraw his membership; stating as a reason, that he was about to engage in a method of business contrary to our code of ethics (manufacturing so-called stock food). The doctor has been a hard-working member, and while his request was granted it was with a great deal of reluctance, and the Secretary was specially instructed to notify Dr. Ruby that, while not a member, we should always be glad to welcome him at our sessions.

Dr. Newton called the members' attention to the fact that the Ohio Good Roads Association was in session in Columbus, and moved that we attend their meeting in a body. Carried.

#### VETERINARY PROGRESS.

The Committee on Veterinary Progress rendered its report, Dr. Sheets reporting on therapeutics and preventive medicine, and Dr. Anderson reporting on veterinary literature.

#### *"Therapeutics and Preventive Medicine."*

"Year by year our professional advancement appears to be a

creditable one in a general way, and yet when we are able to mention so many details of the work which need the benefits of further investigation, such as we yet know not how to apply, we realize that future Committees on Veterinary Progress need not be concerned about adequate material. Around this field of investigation we should throw every protection of our resources against the operations of commercialism in this essential branch of work, which must not be defiled, since so much is expected and impatiently demanded of those upon whom the profession relies for many of its future triumphs.

"Promoters of variously recently introduced preparations, serums, and antitoxins, so called, in their desire to reach horse-men and live stock owners have, in the last few years, apparently come to recognize the value of endorsement by the veterinarian and the medium of his practice for the disposition of their products. At times the profession and some of its periodicals appear over credulous in accepting and endorsing the claims of these promoters, some of whose literature might be characterized by no designation other than extravagant, while others appeal to the ethical and more discriminating branch of the profession in the conservative language and modesty of the really researchful and scientific mind, even using the productions of investigators of renown, edited to meet the requirements of their commercial needs. Endorsements seem so easily acquired either for the nostrum calculated at least by the promoters for all external and most internal pathological and traumatic conditions, or for the prophylactic or curative agents reputed to be prepared with careful regard to aseptic and antiseptic conditions under elaborate laboratory facilities, that it appears but seasonable that the veterinarian for his own, his profession's, and his client's protection, be again asked to be alert to that ever-prevalent factor of commercialism which will ultimately detract from the professional and scientific progress so essential to us for the maintenance of that recognition we already claim, and the returns we expect for our science and our immediate practice. Privately, and by report of practitioners and State authorities, we are led to doubt the efficiency of some of the agents employed by the profession, not because investigators have failed to announce in detail, specific and essential methods of preparation; but, we believe, because supervision in preparation is dictated by knowledge that inadequacy cannot be demonstrated by the practicing veterinarian, nor can he supplant equivalent preparation from his own facilities. As to the 'sure



cure' introduced directly to the laity or to men not entirely accredited as members of a profession striving for, at least, logical methods—just allow the inefficiency of the nostrum, of the sanitation and of the diagnostician to take care of this class with an efficient method, we can supplant by no procedure equally effective. But for that class of prophylactic and therapeutic agent which must appeal to the profession, and through them to the more intelligent of the laity, it is essential that we exercise such scrutiny and prudence as will justify the confidence, in our opinion, we feel imperative to our professional welfare. We can well afford to heed the voices of men who have this thought in mind, and appreciate any effort to so guard the efficiency and reliability of such methods as must be employed by the profession.

"In January, 1903, announcement was made in French veterinary journals of a method of both prophylactic and curative vaccination for use in canine distemper. Members of the English profession took up the matter for investigation as to its merits. The experiments were conducted with quite an abundance of material, but no successful results could be reported.

"In the report of last year mention was made of various reports tending to suggest the repeated malleination in certain types of glanderous infection as a therapeutic agent, particularly from an Army veterinarian in the Philippine Islands. Since, but few favorable additions to this research have been reported, while negative results have been frequent, and strong opinion has arisen in localities against such a procedure.

"During the last year much has come to the notice of the profession at large concerning the immunization against tuberculosis as inaugurated by von Behring, and much criticism has been offered. The mutual benefits of establishing such a method of dealing with tuberculosis as is possible, could the efforts of various authorities be allowed to proceed, each supplanting their results with the accomplishments of their co-laborers, would be most gratifying. At present the sole American source of the supply for the vaccine of von Behring is a New York firm, who make all sorts of roseate representations as to its possibilities, regardless of the fact that extended research has been impossible in the interim since von Behring inaugurated this method. At the American Veterinary Medical Association meeting in August many of us heard Dr. Law's opinion, in which he expressed considerable doubt as to any such assertion being confirmed. Indeed, Dr. Pearson's paper but suggested the necessity

of extended operations in this field before he would care to commit himself. No one subject is to-day receiving more frequent notice in the veterinary literature and even the daily press than von Behring's method of vaccination, and his announcement concerning the cure of tuberculosis made through the lay press. Surely soon will come from some of the many sources now at work along the same lines something definite which may be said of that often discussed subject, tuberculosis. However, as yet no report of any considerable progress along this course of immunity seems to be justified.

"From France comes the announcement of the use of dry powder antitetanic serum for local application.

"Dr. A. S. Alexander, for a long time past veterinary editor of the *Breeder's Gazette*, assuming that barrenness in cows may be the result of the acid condition of the generative secretion due to bacterial influence, which he fails to describe or demonstrate, concludes that yeast fungi introduced will invade the generative system and destroy certain bacterial life, thus neutralizing the acid condition which is said to be destructive to the male and female procreative secretions.

"In the December AMERICAN VETERINARY REVIEW Drs. Merillat give a more comprehensive idea of the effects we may expect in tetanus by the administration of antitetanic serum, describing the toxins as fixed and free, and only upon the latter can we expect any influence, while those toxins, altered by the processes of the disease and becoming fixed in the tissues, can only be modified in the intensity of their characteristic and reactive contractions.

"Perhaps it is scant justice to Dr. Quitman, but some of us remember his announcement at Cleveland in August of the use of anti-diphtheric serum in four cases of tetanus, in which he felt that he was justified in saying that he had received some effects. His limited experience in this particular treatment made him extremely reluctant to commit himself. However, several of his auditors await with some interest whatever he may have to say in the future upon the subject.

"Referring again to the report of 1905, under dietics, some comment was made concerning molasses feeding, of which much has been written, and more recently has been mentioned the objectionable odor. While the consuming animals never complain of this feature, every living creature rebels in flytime at the unavoidable conditions which are not easily obviated.

"As a matter of sanitation, while this Committee may be

drifting on a far-target course from that intended by the Association when we revive the subject of peat moss bedding, the mention of its points of merit having been one thing carried home by your compiler from last year's session, we beg to ask if our subsequent experience with the moss is the usual one or were we imposed upon by the dealer. The fact is we were compelled to abandon the use of the moss on account of its extremely dirty, dusty features, which could not be sufficiently modified to facilitate successful grooming of animals so bedded.

"There is no doubt much material that should become a part of a report of this kind which has not come to the limited vision of your committeeman. However, we have attempted to at least mention the more widely discussed subjects, together with minor ones which may deserve some notice."

*Veterinary Literature.*

"(1) Diseases of Cattle, Sheep, Goats and Swine, by G. Moussu, Professor at the Veterinary College of Alfort, Doctor of Medicine, Doctor of Science, etc., and John A. W. Dollar, M. R. C. V. S., F. R. S. E., M. R. I., President of the Royal College of Veterinary Surgeons; Vice-President of the Royal Institute of Public Health; Corresponding Member of the Central Society of Veterinary Medicine of Paris; Associate Member of the Society of Veterinary Medicine of Brabant (Belgium); Life Member of the Royal Italian Society of Hygiene, etc. Size 6x9½, 785 pages, 329 illustrations and four full page plates. Price, \$8.75. Ever since the study of the diseases of cattle, sheep and swine has formed an integral part of the veterinary curriculum, students, teachers, and practitioners of veterinary medicine and surgery have demanded a complete but concise text-book on the subject. Several excellent treatises and monographs dealing with certain conditions were published during the nineteenth century; at the present some of these are unobtainable, and none can claim to represent the latest achievements of pathological and surgical science. The past twenty years have witnessed many important discoveries. The greatest minds in the world of bacteriology and pathology have been enlisted in the study of diseases of cattle, and advances have been registered which it is the object of the present work to set forth in the fewest and simplest terms. With the exception of certain diseases usually dealt with by the 'stamping-out method,' and which, therefore, possess a relatively minor importance for practitioners, every effort has been made effectively to cover the

field of medical and surgical diseases of cattle, sheep, goats and swine. A glance at the annexed 'Contents' will show, much more convincingly than any verbal description, to what degree the writers have been successful. Their object has been to note, even if briefly, all recent advances in home and foreign literature, and the references have been carried up almost to the day of publication, in 1905. It is believed that the book will prove of the greatest possible assistance to students and practitioners. Although, owing to the activity at present prevailing in this field, the task of adjudicating on the value of new discoveries has necessarily been difficult, the writers trust that none of prime importance have been omitted and that those included may prove a source of inspiration to many earnest workers, and may give a further impulse to the study of this formerly neglected subject.

"(2) Friedberger and Fröhner's *Veterinary Pathology and Therapeutics*. Authorized translation. New edition, revised and enlarged, from the fourth German edition. Translated and edited by M. H. Hayes, F. R. C. V. S., author of 'Points on the Horse,' etc., with notes on Bacteriology, by Dr. G. Newman, D. P. H., in two volumes, 8vo., of about 600 pages each. Just ready. Price per volume, cloth, \$4.00, net, post or express prepaid. Opinions: 'It is the work I recommend to my students, and believe that of all works on veterinary medicine, it is the best adapted to class room use.'—(Leonard Pearson, *Dean and Professor of Practice Veterinary Medicine, Department of Veterinary Medicine, University of Pennsylvania.* . . . 'Hope you will be amply repaid for its production—this, the most modern and best text-book we have.'—(J. L. Robertson, *Professor of Veterinary Medicine, New York-American Veterinary College.*)

"(3) *Veterinary Medicine*. New editions of Volumes I, II and III. Revised and enlarged, at \$4.00 per volume. Publisher, Prof. James Law, Ithaca, N. Y.

"(4) *A Treatise on Epizoötic Lymphangitis*, by Captain W. A. Pallin, F. R. C. V. S. Cloth, 5¾ x 8½, 90 pages, with 17 fine full-page illustrations, \$1.25, postpaid. In this work the author has endeavored to combine his own experience with that of other writers, and so attempts to give a clear and complete account of a subject about which there is little at present in English veterinary literature. Contents: Literature on the disease, nature of the disease, history, geographical distribution, bacteriology, staining, culture, incubative period, symptoms, cutaneous varie-



ty, mucous membrane variety, general, in cattle, post-mortem lesions, diagnosis, differential diagnosis, experimental inoculation and susceptible species, resistance of virus, immunity, predisposing causes, general methods of infection, treatment (external, internal), mortality and prognosis, prophylaxis, etc.

"(5) Treatise on Parasites and the Parasitic Diseases of Domesticated Animals. By L. G. Neuman. Translated by George Fleming. Revised edition, edited by James McQueen. Large 8vo., 714 pages. Cloth, \$6.50 net.

"(6) Diseases of Swine. By Dr. R. A. Craig, Purdue University, Indiana, 150 pages, numerous illustrations. Price, 50 cents. Publisher, Orange Judd Co., New York, N. Y.

"(7) Leisering's Atlas of the Anatomy of the Horse and of Other Domestic Animals. For veterinarians, students of veterinary medicine, agriculturists, agricultural colleges, horse fanciers and artists. In 54 partly colored plates,  $11\frac{1}{2} \times 12\frac{1}{2}$  inches, newly edited and enlarged by Professor William Ellenberger, M. D., Ph. D., Private Royal Medical Adviser, Professor in Royal Veterinary High School of Dresden, with the assistance of Dr. Baum, Dresden, Germany. Volume I, Plates, translated by A. T. Peters, D. V. M., and L. B. Sturdevout, A. B., B. S. C. Cloth, \$10.00, net. Volume II, text will be ready shortly. Price for advance orders. Cloth, \$2.50, net.

"(8) Catechism of Veterinary Surgery. By W. E. A. Wyman, M. D. V., V. S., Author of the 'Clinical Diagnosis of Lameness in the Horse,' 'Tibio-Peroneal Neurectomy,' translator of DeBruin's 'Bovine Obstetrics,' etc. Cloth, size 6 x 9, 317 pages. Price \$3.50. Concerning this new work attention is called to the following points: (1) It discusses the subject upon the basis of veterinary investigations; (2) it does away with works upon human pathology, histology, etc.; (3) it explains each question thoroughly both from a scientific as well as a practical point of view; (4) it is written by one knowing the needs of the student; (5) it deals exhaustively with a chapter on tumors, heretofore utterly neglected in veterinary pathology; (6) the only work in English specializing the subject; (7) the only work thoroughly taking into consideration American as well as European investigations; (8) offering practical hints which have not appeared in print, the result of large city and country practice. Contents: General surgery, arrest of hæmorrhage, the healing of wounds, abnormal granulations and cicatrization, regeneration of the various tissues, traumatic fever, septicæmia, pyæmia, specific traumatic infectious diseases, the

treatment of wounds, the treatment of specific wounds, contusions, subcutaneous ruptures, inflammation, abscess, ulcer, fistula, gangrene, tumors, tuberculosis, concretions and foreign bodies, hernia and prolapsus, diseases of bones, diseases of articulations, diseases of tendons, diseases of synovial sheaths of tendons, diseases of the mucous bursa, diseases of aponeuroses, diseases of nerves, diseases of arteries, diseases of veins, diseases of lymph vessels, diseases of glands, diseases of skin, diseases of mucous membranes, diseases of the subcutis, congenital malformations.

"(9) Canine and Feline Surgery, by Frederick T. G. Hobday, F. R. C. V. S. New edition, revised, rewritten and greatly enlarged. 8vo., about 300 pages, with nearly 200 illustrations. Ready shortly. Cloth, \$3.25, net.

"(10) Animal Dentistry and Diseases of the Mouth, by Dr. L. A. Merrillat, Professor of Surgery, Chicago Veterinary College. 265 pages, over 160 original illustrations, plates and drawings. 8vo. Cloth, \$3.00, net.

"(11) Horses' Teeth, by William H. Clarke. Fourth edition, revised, with second appendix, cloth, size  $5\frac{1}{4} \times 7\frac{1}{2}$ , 322 pages, illustrated, \$2.50. A treatise on their mode of development, anatomy, microscopy, pathology and dentistry; compared with the teeth of many other land and marine animals, both living and extinct; with a vocabulary and copious extracts from the works of veterinarians and odontologists. Contents: Tooth germs, temporary dentition, permanent dentition, canine teeth, remnant teeth, dental cysts and supernumerary teeth, horses' teeth, fractured jaws, teeth as indicators of age, trigeminus or fifth pair of nerves, etc. Public opinion: It contains much besides the matter pertaining to horses' teeth, the teeth of many other animals being described and compared with those of the horse. It gives a history of the evolution of the horse from early geological periods, the wolf-teeth, which the author has named 'remnant teeth,' being traced back to the eocene period, when they functionally developed. This fact throws light on what has been a mystery, and the author appears to have made a discovery.—(*Journal of Comparative Medicine and Surgery*). . . . Embraces much that is instructive and useful.—(*Dental Cosmos*). . . . An immense amount of useful information.—(*Medical Record*). . . . We have read the work with much pleasure and no inconsiderable profit.—(*Dental Advertiser*). . . J. H. Wattles, D. V. S., Dean of the Kansas City (Mo.) Veterinary College, said: 'I recommend all veterinarians to purchase

your book.' . . . Invaluable to veterinary surgeons and of great practical benefit to dentists.—(*Dental News*. . . . Contains instructive matter for dentists, and all scientific and thoughtful men.—(*Dental Miscellany*.)

"(12) Manual of Veterinary Hygiene, by Veterinary Captain F. Smith, M. R. C. V. S., Examiner in Physiology, Royal College of Veterinary Surgeons, author of 'A Manual of Veterinary Physiology.' Cloth,  $5\frac{1}{4} \times 7\frac{1}{2}$ , 1036 pages, 355 illustrations. Price \$4.75. The author combines the subject of hygiene as an art and science. He indicates we must know how guiding principles in sanitary science act, and must understand the methods by which such subjects as air, food, water, soils, etc., are examined; ventilation, drainage, disinfection, etc.; and clearly appreciate by what agencies diseases spread and how these are best corrected; a careful study directs us how diseases are prevented. Contents: Water, air, ventilation, food, stables, removal of excreta, soils, disinfection, labor, individual hygiene, eradication of epizootic diseases, elementary meteorology. Comments: 'The work is a very solid one, and it is a pleasure to recommend it.'—(*Army and Navy Gazette*.) 'Too much praise can scarcely be accorded for the manner in which it is presented. It should be on the bookshelf of every horseman, horse-keeper and veterinary surgeon.'—(*United Service Gazette*.)

"(13) Essentials of Physiology for Veterinary Students, by D. N. Patton, M. D., F. R. C. P. 157 illustrations, 428 pages. Price \$3.00.

"(14) A Pharmacopœia, by Richard V. Tuson. Including the outlines of materia medica and therapeutics, for the use of practitioners and students of veterinary medicine. Sixth edition, revised and edited by James Bayne, F. I. C., F. C. S., 376 pages. Cloth, \$2.50, net.

"(15) Veterinary Doses and Prescription Writing, by Dr. P. A. Fish, Professor of Veterinary Physiology and Pharmacology, Cornell University, Veterinary Department. 111 pages. Cloth, \$1.50, net.

"(16) Dogs of all Nations: Their Characteristic Points, etc. The most comprehensive work ever issued dealing with pedigree dogs and hounds. Not only is there a detailed description on every known dog, but each article is given in four languages (English, French, German and Dutch). The most noticeable feature of the book are the illustrations, which are taken from photographs or pictures of dogs in England and abroad. Volume I, Sporting Dogs, 1000 illustrations of more than 2150

dogs. Volume II, Non-Sporting Dogs, 1300 illustrations of more than 1950 dogs, by Henry DeByoant. Just ready. Two volumes, quarto, half morocco. Price \$25, net.

"(17) The Sporting Dog, by Joseph A. Graham. 327 pages, illustrated. Cloth, \$2, net.

"(18) The Trotting and Pacing Horse in America, by Hamilton Busby. 269 pages, illustrated. Cloth, \$2, net.

"(19) Diseases of the Horse's Foot, by H. Caulton Reeks, F. R. C. V. S. 400 pages, about 150 illustrations. Price \$4.

"(20) LeBlanc Cadéac and Carougeau, by L. A. Merillat. Translated, with additions, new chapters and illustrations. General veterinary surgical pathology, about 500 pages, 80 illustrations and colored plates. Price \$4.50."

#### COMMITTEE ON VETERINARY DISEASES

reported through its Chairman, Dr. Sisson. Dr. Sisson being State Veterinarian, his committee report was really his annual report to the State Board; and every member will be sent a copy when it is printed.

#### REPORT OF THE COMMITTEE ON CLINICS AND ARRANGEMENTS

was given by Dr. Brumley, who stated that clinical material was in the hospital ready for to-morrow; and that arrangements had been made for a banquet at the Great Southern Hotel. Dr. Brown and he would now circulate among the members and sell the tickets.

Dr. Gribble stated, that as Secretary he had received from Dr. Wyman a copy of the latter's recent book, "Catechism of Veterinary Surgery," as a donation to the Association's library. A resolution was adopted ordering the Secretary to tender the thanks of the Association to Dr. Wyman, and to place the book with other of the Association's property.

#### ELECTION OF OFFICERS.

Next followed the nomination and election of officers. There were four nominations for President, requiring three ballots to decide; Dr. W. A. Axby being selected.

There being but one nominee for each of the other offices, they were soon dispensed with, and the Chair declared the following as the officers for 1906:

President—W. A. Axby, Cincinnati.

Vice-President—C. B. Frederick, Canton.

Treasurer—T. B. Hillock, Columbus.



Secretary—Wm. H. Gribble, Washington, C. H.  
Censor—J. D. Fair, Berlin. The censors are Dr. J. D. Fair,  
O. V. Brumley, E. H. Shepard.

FOR LIGHT-HARNESS RACING.

The following resolution was introduced by Drs. Newton and Cliffe, and duly carried :

"WHEREAS, The breeding, education and development of the light-harness horse with stock farms devoted to his breeding, amount in values and investment to about fifteen million dollars in Ohio, and is an important asset of the State ;

"Resolved, That as members of the Ohio Veterinary Medical Association, we herein express the hope that the Legislature now in session will enact a reasonable racing law on the lines of the Canadian law, the New York law or the law of the republic of France, all of which laws have been fully tested and approved by the popular judgment of the people."

Dr. Gribble read the following advertisement, which had appeared in an Ohio paper and was only a sample of others from same source :

"Dr. O. C. Pettiford, graduate of two Veterinary Colleges and has passed the Ohio State Board of veterinary medical examiners makes a specialty in the therapeutics obstetrics and surgery including the following operations: Trephuning; ear trining, amputation of ear operation for drooping ears. Operation cause ears to droop. Tapping cornea of eye, strabismus, cataract, excision of eye ball, excision of membrananictitans, entropion and trichiasis, extropion amputation of tongue, scaling and cleaning teeth, extraction of teeth, passing probang, œsophagotomy, tracheotomy, paracentesis thoracis, paracentesis abdominis, laparotomy, operation for hæmorrhoids, gastrotomy, operation for intussusception of intestine, operation for impaction of intestine, enterotomy, enterectomy (anastarmosis of intestines) excision of spleen, excision of omentum, urehrotomy, nephro-lithotomy nephrectomy, puncture of bladder, Sithotomy, castration (male and female dog and cat.)

Ophrorectomy, hystertomy, hysterectomy, amputation of toes, limbs and tail. Tenotomy, special examination for the necessity for major and minor operations, examinations for lameness sporadic internal diseases, infectious contagious diseases. Examination for soundness. Obstetrical operations and determination of age." — (*News Republican*, Kenton, Ohio, Jan., '06).

## READING OF PAPERS.

Dr. Torrence now read a paper, "The Prostitution of the Horse for the Automobile."\*

The doctor having recently purchased an automobile, was naturally severely criticized; and this paper was his defence. To appreciate it, one must hear the doctor himself do the reading.

Dr. R. C. Hill read reports of three or four very interesting cases.\*

Several members had had just such cases, and the question arises, "Why don't they report them?" The REVIEW is always willing to print them.

Dr. Norton Dock followed with a short paper on "Municipal Meat and Milk Inspection."\*

This was practically not debated at all, much as the subject was worthy, probably due to so few present having had personal experience, as our authorities usually prefer politicians.

Dr. C. B. Frederick read a very interesting paper on a subject the cause of which has baffled many: "Chronic Hydrocephalus, or So-Called Dummies."\*

The relative merits of treatment and cure were debated, showing greatly diverse opinions.

The essay by Dr. J. L. Axby, "Wound Treatment or Surgical Therapeutics"\* was listened to very attentively by all; and showed that the writer had spent much time as well as having had plenty of experience in acquainting himself with his subject. Cleanliness was his watchword.

This was followed by a paper bearing somewhat of a relationship, by Dr. L. P. Cook, "Nitrous Oxide Anæsthesia in Animals."\*

The two latter papers were debated together and debated well, as the subjects were of general interest to every practitioner.

Dr. G. W. Kinsey read a report of a very interesting case of "Diaphragmatic Hernia,"\* showing that almost identical cases of this nature have very different symptoms.

Moved and seconded that we adjourn, to meet in the rotunda of the State House at 7.30 P. M., go in a body to the Good Roads meeting, and at 9.30 P. M. meet at the banquet hall of the Great Southern Hotel. Carried.

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\* Will be published in an early number of the REVIEW.

## THE GOOD ROADS MEETING.

The members met as per adjournment, went in a body to the good roads meeting, were formally introduced to the audience, and listened to several good short talks on the subject of Good Roads; as well as seeing some of the finest stereopticon views we ever saw, all bearing directly on the subject.

## THE BANQUET.

At 10 P. M. we met in the banquet hall and 72 sat down to the tables. This feature of the meeting seems to be attractive. Besides enjoying good things edible we had music and singing, story telling, and a talk; and it was leaning towards morning before we adjourned.

WEDNESDAY, JAN. 17, 1906.

Meeting called to order by Dr. Clemons at 9 A. M., and as the Board of Censors had had an early session, they were ready to report on

## APPLICATIONS FOR MEMBERSHIP.

The Secretary stated that fifteen applications had been received, thirteen of which the Board recommended be elected to membership. These thirteen were read, and as no objections were offered to any of them, the rules were suspended, and the Secretary, instructed to cast the ballot of the Association in the affirmative for each and every one so recommended.

J. C. Butcher, Lima, O., O. S. U., '04.

E. C. Langdon, Sabina, O., O. S. U., '04.

V. A. Dennis, Westerville, O., O. S. U., '05.

J. W. Choate, Columbus, O., O. S. U., '03.

H. L. Williams, Newark, O., Ont., '03.

B. C. Eldredge, Swanton, O., Ont., '02.

H. N. Jeffries, Greenville, O., Ont., '00.

F. M. Jeffrey, Toledo, O., Ont., '87.

F. H. Dettman, Troy, O., Ont., '05.

M. J. Jones, Jr., Blanchester, O., Ont., '05.

Henry D. Townley, Cincinnati, O., Cin., '05.

Chas. H. Tiffin, Hillsboro, O., Cin., '05.

W. A. Kramer, Dayton, O., McKillip, '03.

Each new member was introduced in turn, and responded.

## RESUMPTION OF LITERARY PROGRAMME.

Dr. J. C. Butcher read a paper, "A Treatise on Dog Dis-temper, with Special Reference to Treatment."\*

\* Will be published in an early number of the REVIEW.

This paper was well debated and showed that the treating of sick dogs by the veterinarian is greatly on the increase.

Dr. E. H. Shepard's paper, "Daily Experiences Not Found in Text-Books,"\* was good and practical. This brought out reports of several interesting cases of mistakes in diagnosis and prognosis. "Accidental Surgery,"\* by Dr. Shaw, was next read. This paper was short but of interest, and brought out reports of several mistakes or accidents. Dr. Sheets told of nicking the bladder in spaying a bitch. Animal recovered. Dr. Newton told of removing uterus of cow, with ligation, and recovery. It seemed so simple that the year following, when the owner had another such case, he proceeded to remove it himself, and called the Doctor later, because of several pipes he could see in the wound. Dr. Newton found that intestines had been ligated, and cut off with the uterus. This case did not survive. Dr. Cotton spoke of case of a ridgling being castrated; where the operator drew down the intestine, made an incision, and removed a dung ball, returned intestine, then removed testicle, and the *horse lived*. Several veterinarians saw this operation.

Dr. ———— reported where a large aneurism had been opened by a competent veterinarian mistaken for an abscess; death of patient and a law suit followed. Several other accidents were related and it seems to us, that if such accidents and mistakes were more often reported, the tendency would be for the better, for would we not remember the old saying, "learn by the mistakes of others?"

Dr. J. E. Johnson read a short paper, "My Treatment of Pneumonia."\* Here again the paper was short, but the debate so long that the Chair called attention to the fact that time was rapidly passing.

Dr. E. H. Callender reported on his efforts to "prosecute a quack." He had furnished plenty of positive evidence, as well as witnesses and papers, yet the grand jury would not indict.

As it was now past the dinner hour, with other routine business to finish, the following papers were read by title only: One on "Surra," and one on "Rinderpest," by Dr. M. J. Myers.

Motion was duly carried, instructing the Secretary to have lists of members printed and a copy furnished to each member.

The Secretary read the names of members in arrears for

\*Will be published in an early number of the REVIEW.



dues, and was instructed to drop them from the roll of membership.

Dr. Howe called the members' attention to the increased labors of the Secretary and thought that officer should be provided with a typewriter, Dr. Newton seconded the motion; whereupon Dr. Blattenburg inquired "male or female."

The motion was changed to read *typewriting machine*, was duly put to vote, and declared carried.

The following amendment to the Constitution, signed by the required six names, was introduced and read:

"*Resolved*, That Sec. 1. of Art. III. be so amended that it will read: "'An annual session, to be held in Columbus, during January of each year; excepting January, 1907, when the annual session shall be held in the city of Cincinnati.'"

No further business appearing the newly-elected officers were escorted to their seats.

Dr. W. A. Axby, on taking the chair made a few well chosen remarks; then appointed the following committees:

*Committee on Veterinary Progress.* — Drs. J. V. Newton, W. E. Clemons, N. Wells Hillock.

*Committee on Veterinary Diseases.* — Drs. E. H. Shepard, E. O. Hess, F. E. Anderson.

*Committee on Clinics and Arrangements.* — Drs. W. R. Howe, C. H. Sater, J. A. Meagher, H. W. Brown, Paul Fischer.

We now adjourned *sine die*, all going to the Veterinary Hospital to see or assist at the clinics.

WM. H. GRIBBLE, *Secretary*.

## CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

(Abstracted from the *Western Veterinarian*, January, 1906.)

The annual meeting was held December 13, 1905, at the Palace Hotel, San Francisco, Cal., and was called to order by the President, Dr. R. A. Archibald. Roll-call showed the following members present: Drs. Spencer, Sr., Blemer, Megowan, Longley, Danielson, Keane, Summerfield, Gordon, Hoffman, Somers, Shaw, Hogarty, Sullivan, Creely, Jackson, Williams, Fox, Faulkner, Segsworth, Phelps, Browning, Sawyer, Donnelly, Brady, Fisher, Haring, Howard, and Archibald. Visitors: Drs. Hunter, Eastman, Hammond, Mr. Fred J. Sinclair, and a number of students from the San Francisco Veterinary College.

The following proposals for membership were read and referred to the Board of Examiners: Dr. Chas. Eastman, K. C. V. C., and Drs. E. B. Hearn and H. M. Hunter, licentiates. The application of Dr. William F. Betzold, C. V. C., was approved by the Board of Examiners and he was duly elected to active membership.

The election of officers for the ensuing year resulted as follows:

President—Dr. R. A. Archibald, Oakland.

Vice-President—Dr. P. H. Browning, San Jose.

Secretary—Dr. Chas. H. Blemer, San Francisco.

Treasurer—Dr. Carl W. Fisher, San Mateo.

Board of Examiners—Drs. Spencer, Sr., Fox and Creely.

Dr. George Gordon was then called upon for an essay and responded by reading a carefully prepared paper, the subject being, "Our Profession, Past, Present, and Future."

During the discussion that followed Dr. Spencer remarked that the State Veterinary Medical Board and the Prosecuting Committee of the Association had done a great deal toward stamping out quackery and he suggested that it would be an excellent idea for the above mentioned board and committee to make an appeal to the public, setting forth the righteousness of our profession and the unrighteousness of quackery.

Dr. Gordon thought it would be a good scheme to get out a list of licensed practitioners and hang the list in our offices.

Dr. F. Segsworth responded to an invitation to entertain the meeting by reading a paper upon the "Methods of the Quack."

Dr. Creely was called upon to open the discussion, which he did by reviewing the work of the Prosecuting Committee during the past two years. He stated that it was a very difficult matter indeed to convict violators of the law. In the majority of cases the prosecuting attorney and justices of the peace are very indifferent and if the committee employ a special attorney he is looked upon with disfavor by the regular court officials. So far the committee have caused eight arrests to be made, from which they obtained seven convictions and one disagreement on the part of a jury. He closed his remarks by making several suggestions relating to the amending of the State law.

Dr. J. J. Summerfield when called upon to read a paper, stated that he did not have one prepared, but had brought down a double cryptorchid, upon which Dr. Spencer had consented to operate at 8 p. m. that evening, at Dr. Creely's hospital. The Doctor's excuse being a valid one, he was pardoned for not having a paper.

Dr. E. J. Creely then read an interesting and entertaining paper upon the "Therapeutical Agents Used in the Treatment of Azoturia."

The President, in declaring the subject open for discussion, stated that this was the kind of subject that made our meetings interesting and worth attending. Discussions upon obscure subjects such as this would eventually bear fruit. If a cure for this disease was discovered the discovery would most likely be due to some suggestion or some light thrown on the proposition during its discussion on occasions like the present. All the members had undoubtedly had some experience with the disease and he hoped all would express their views upon the subject matter.

Dr. Sullivan did not believe in passing the catheter, as he had seen cases that had apparently good chances for recovery die from its use.

Dr. Gordon did not agree with Dr. Sullivan; thought the catheter should be used and he could see no harm in it if used properly.

Dr. Spencer said he had the same success as the rest of the members in the treatment of the azoturia. Did not think he used to lose so many cases as he does now. Thought that the disease was becoming more virulent. He believed the symptoms of the malady were due to the absorption of a toxin into the muscles. Had been apparently successful with certain lines of treatment for a while which later on had to be discarded as being unreliable. Uses catheter whenever indicated and had no bad effects from its use. Believed that fatal cases were due to cerebral complications probably from the effects of the absorption of aforesaid toxin. Did not believe that any of the members present knew anything about the disease and he frankly confessed to have as limited a knowledge himself. If he had his desire fulfilled he would never be called to such cases.

Dr. Danielson cited a case of azoturia he had seen back in New Jersey upon a ferry boat. The animal was down unable to rise to its feet and during its struggles it fell overboard, where, after a few attempts, it started swimming and swam to the nearby shore, which it reached fully recovered. Thought the shock incidental to falling in the water may have had something to do with the recovery of the animal.

Dr. Creely was satisfied that the disease had its origin in the blood. The lack of a gall bladder in the horse may have considerable bearing on the disease. Believed that a proper thera-

peutic agent would be discovered within five years by some young investigator.

Dr. Fox, when called upon to give his treatment for the disease, stated that he hardly ever treated two cases alike. It depended altogether upon how he found them as regards conditions, symptoms, etc.

Dr. Longley thought that the severity of the attack depended upon the amount and nature of the exercise given the animal. Cited the case of his own driving horse, which experienced an attack of the disease, but which quickly recovered without treatment upon being given rest.

Dr. Fisher thought that locality had a great deal to do with these cases. His treatment was to give an aloes pill and follow with acetanilid and bi-carbonate of soda.

Dr. Megowan agreed with Dr. Fisher in regard to the severity of the disease. His experience while going to college was that in Canada nine out of every ten cases affected die. He had used apparently all the drugs on the list. At the present time his treatment was laxatives and some form of soda. Did not think a cathartic was indicated. Used slings and catheter when indicated; also hot fomentations in the early stage. Had not seen any bad results from the proper use of the catheter. Wanted to know from Dr. Creely what results he had with cases in which the large muscles of the hip became atrophied.

Dr. Creely had seen a great many of such cases, but had little success in their treatment. Believed in turning animal out and leaving it to nature to effect a cure. In this way about fifty per cent will recover.

Dr Shaw said it was undoubtedly a fact that little was known as to the etiology of the disease. It was evident that in the early stages the kidneys cease to act and the burden of their duties is thrown upon the lungs, skin, and bowels. Did not believe in the use of aloes on account of the existing paresis of the bowels. Gave oil as a laxative, diffusible stimulants, diaphoretics and hot applications to all of the body. Gave nux vomica when cerebral symptoms were absent. Did not use slings. Gave cannabis indica and chloral hydrate when brain is affected. Used catheter when indicated; raked and gave cold water enemas.

Dr. Matthew Brady then gave the results of some experiments with the use of a clarifying apparatus for the cleansing of milk, showing that the use of same lowered the bacterial count of milk subjected to its action.



During the discussion that followed Dr. Archibald stated that he did not believe in the use of a clarifier for the purpose of removing dirt and filth from milk. In the first place it only removed the visible or coarse particles of dirt from the milk, and he considered it an excuse for dairymen to be careless in the handling of milk; at the same time it really constituted a fraud by misleading the public and those not thoroughly familiar with the production of milk. It certainly could not be expected that a scientific body like this could endorse the use of clarifiers for the cleansing of milk when such a method was neither practical nor scientific. He believed that no mechanical contrivance would ever be invented to clean milk after it once became dirty, and that if all the energy and money were expended toward keeping dirt out of milk in the first place, some good would be accomplished. One rule in regard to the production of milk that should be nailed on the wall was, that once dirt and filth get into milk there is absolutely no way in which it can be removed, and leave the milk in a good condition.

Then, again, the effects of the process of clarification upon the milk itself is similar to that of separation, which injures the food value of the milk. It is a well known fact that babies will not thrive on separated milk, consequently they will not thrive on clarified milk. The whole proposition is a fraud and a delusion and of no more benefit than sterilization, pasteurization, or freezing, all of which methods are injurious to milk.

Drs. Megowan and Spencer agreed with Dr. Archibald that the solution of the problem was the keeping of dirt out of milk in the first place.

Dr. Keane was inclined to agree with Dr. Brady that if the clarifier removed some dirt, and, incidentally, some bacteria, it was a benefit.

Dr. Archibald in reply to this stated that if dairymen could fool the public by the use of clarifiers, it would be a great benefit to them financially, as it was much cheaper for them to produce dirty milk than it was to produce clean milk. He ventured to say that if the public could see the kind of stuff which remains in the clarifier after a batch of dirty milk is passed through it, they could not be hired to drink the clarified product. The spectacle was certainly disgusting and nauseating. One would naturally conclude that milk which had contained such a quantity and quality of filth could hardly be fit for hogs to drink.

Dr. Spencer stated that he had seen milkers pause in their

work and go around the corner of the barn, dress venereal sores, etc., and then resume milking without washing their hands.

Dr. Archibald wanted to know if Dr. Spencer thought clarification would improve milk produced under such circumstances. The answer was emphatically *No*.

Dr. Haring spoke at some length on the subject, and stated that in the main he agreed with what Dr. Archibald had said. Dr. Brady had stated that the detritus separated by the use of the clarifier showed, on bacteriological examination, colonies of colon bacillus, and numerous staphylococci colonies, besides various moulds and putrefactive germs. This fact furnished conclusive evidence as far as he was concerned that the milk contained some of these same organisms after clarification, as it was only possible for the apparatus to remove a small percentage of them. The only way to have clean milk is to produce it clean.

Dr. Keane did not agree with Dr. Archibald's statement that pasteurization, sterilization, clarification, etc., were worthless as far as baby feeding was concerned. He believed that any method that would reduce the bacterial count was, to a certain extent, beneficial.

Dr. Archibald in reply said that as far as suitable milk for babies was concerned, milk from which bacteria by some method had been removed was still unfit for baby feeding, as it contained some lactic acid, the presence of which rendered it indigestible for babies. Acid, lactic or hydrochloric, introduced with milk into a baby's stomach, acted on the casein, producing a curd, that babies are incapable of digesting. This is the reason that babies practically starve when fed upon pasteurized or sterilized milk. Consequently milk containing a large number of bacteria, cannot be treated so it will be a suitable food for infant feeding.

Dr. Keane did not think that there was lactic acid present in milk until it became sour.

Dr. Archibald said that milk did contain quantities of lactic acid long before it became appreciably sour.

The hour being late, the discussion was closed.

Dr. Keane moved that a committee of three be appointed by the chair to act as a legislative committee with a view of amending the State law regulating the practice of veterinary medicine and surgery in this State. The motion carried, and the chair appointed the following: Drs. Keane, Fox, and Archibald.

The chair appointed the following named gentlemen as essayists for the next meeting: Drs. Browning, Betzold, Donnelly, and Fisher.

Dr. Browning announced that Dr. Spencer and he proposed to have a clinic for the June meeting that would equal, if not surpass, anything of the kind given heretofore. The announcement was received with delight by the members present.

After transacting some routine business the meeting adjourned to meet at the Palace Hotel, San Francisco, on Wednesday, March 14, 1906.

After the meeting of the Association the members gathered at the San Francisco Veterinary College, where Dr. H. A. Spencer, of San Jose, exemplified the operation of castrating a double cryptorchid. The operation was performed rapidly, skilfully, and in an up-to-date aseptic manner and was highly appreciated by all those present. During the operation Dr. Spencer described in detail each and every step taken in such a way that all present could thoroughly understand his *modus operandi*. Later reports show that this animal made an uneventful and rapid recovery.

#### SCHUYLKILL VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting was called to order December 20, 1905, at Reading, Pa., by its President, Dr. G. A. Wehr, in the Board of Trade Rooms, 25 North Sixth Street, at 10.15 P. M. Members responded to roll-call, as follows: Drs. D. R. Kohler, O. G. Noack, U. G. Bieber, G. A. Wehr, E. C. Yoder, F. H. Schneider and S. G. Burkholder. Among our distinguished visitors were Dr. M. J. Collins, Myerstown; Drs. Leonard Pearson and C. J. Marshall, Philadelphia, and John J. Kenney, the latter representing the West Disinfectant Company.

The minutes of the previous meeting were read and approved.

Communications from Drs. Huyett, Ridge and Kershner were read; the latter, who formerly practiced at Fleetwood, Pa., now has resided at Topeka, Kan., for nine years, being employed by the U. S. Bureau of Animal Industry. He has made inquiries concerning our re-registration law. The Secretary was instructed to notify Dr. Hoskins, Secretary of the Board of Examiners, to mail Dr. Kershner a blank to register.

President Wehr then delivered the following address:

*"Friends and Fellow-Veterinarians:*

*"We meet here to-day for the purpose of exchanging ideas*

with the hope that our chosen profession may be uplifted, and placed upon a higher plane. Not that it has lacked efficiency in the past, for I sincerely believe we have kept par with modern developments, but in order that we may be able to keep up with the progress of modern advances in every phase of life. It is essential that we hold these conventions. The Schuylkill Valley Veterinary Association has from its very inception been a power for good, professionally at least, as well as socially. I trust that these sessions may continue to be elevating and profitable, not only to ourselves, but to the community in which we live.

"It behooves every one of us to feel and so conduct ourselves that each and every one of us is part and parcel of this Association, and with this hope in view, as President of the convention, I heartily extend unto each and all of you the hand of welcome. It is not my convention, nor the convention of the Executive Committee, but it is our convention. The programme arranged, and here to be discussed, is but a minor factor toward the success of the Association; but the personality of the individuals who compose this body alone is responsible for its success or failure, as the case may be. All recent progress in art, science, and in the professions, had been made by the exchange of ideas, either by personal associations, or through the medium of the press, and the resultant ideas evolving therefrom.

"In looking over the programme, I cannot help but feel that a grand intellectual or rather professional feast has been prepared for us. It lies with us to partake of the same. Thanking you heartily for the confidence reposed in me to preside over this body, I again extend the hand of welcome, and as in all human efforts we are judged more by what we do than by what we say, I now declare this Association ready for business."

Dr. E. C. Yoder, of Amityville, and Dr. C. D. Gruber, of Bernville, were elected to membership. The Secretary's and Treasurer's reports were read and approved. A number of able reports were given by delegates to various conventions.

Corresponding Secretary Dr. W. G. Huyett, Wernersville, prepared a paper on "The Post-Mortem Examination Conducive to the Veterinarian's Better Interest."\* Owing to sickness of the essayist, the paper was read by the Secretary *pro tem.*, Dr. Longacre. The afternoon session was opened with a paper on "Colic and Its Treatment,"† prepared by Dr. F. H. Schneider, Philadelphia. Various remedies for the ailment were suggested.

\* Will be published in an early number.

† Published elsewhere in this number.



Dr. E. C. Yoder opened a discussion on "Exsotoses and Their Treatment." Dr. McCarthy, of Pottsville, was to have read a paper on the subject, but failed to be present. Dr. Potteiger, Selin's Grove, was down to read a paper on "Purpura Hæmorrhagica," but was prevented by another appointment from attending. These subjects were all thoroughly discussed.

Dr. Leonard Pearson, State Veterinarian, gave a review of the proceedings at the International Veterinary Congress, held at Budapest, Hungary, last September, and also of the Tuberculosis Congress, held at Paris, in October. Thirteen hundred delegates were present at the former and a large number at the latter. They hailed from all parts of the world. Dr. Pearson was one of them.

Dr. C. J. Marshall, Secretary of the Penna. State Veterinary Medical Association, made general remarks, participating in the discussions, and invited the members to attend the semi-annual meeting in Philadelphia, March 6th and 7th.

Members were appointed to prepare papers for the annual session, to be held at Reading, Pa., on June 20th, 1906.

W. G. HUYETT, *Secretary*.

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#### MISSISSIPPI STATE VETERINARY MEDICAL ASSOCIATION.

Knowing the interest that the REVIEW has in all matters pertaining to the veterinary profession and live stock interests of our country, I beg, as Secretary of our Association, to report proceedings of our recent meeting in which we established the Mississippi State Veterinary Medical Association. We have only a few veterinarians in our State, probably not over 15 or 18, but we trust that our recent meeting may be only the beginning of many that will result in building up public sentiment in favor of our profession and sanitary measures pertaining thereto.

During the early part of January, it was announced in our State papers that there would be a meeting of the veterinarians of the State at the Agricultural College on January 17, for the purpose of effecting a State organization, and considering some matters pertaining to veterinary science of State interest. All veterinarians were invited to attend this meeting. The following named men were present: Drs. H. C. Bassler (U. of P. '02), Greenville; B. M. Davenport (O. V. C. '05), Starkville; W. P. Furgerson (C. V. C. '04), Grenada; B. M. Mills, (C. V. C. '90),

Sardis ; J. Oliver (O. V. C. '96), Columbus ; Robert Rives, (O. V. C. '02), Mulden ; and J. C. Robert (U. of P. '95), Agricultural College, Miss. Letters were received from other members of the profession expressing their approval of the proposed organization and their inability to attend. The meeting was called to order by Dr. W. P. Furgerson, and its object stated. The Chairman appointed a Committee of three on Constitution and By-laws. A State organization was effected and is known as the Mississippi State Veterinary Medical Association. Dr. W. P. Furgerson was elected President for the coming year, Dr. John Oliver Vice-President and Dr. J. C. Robert Secretary-Treasurer. A constitution and by-laws were adopted. The object of the Association as stated in Article II of the Constitution "are to promote goodfellowship ; to elevate the standards of veterinary science ; to enlighten and direct public opinion regarding veterinary problems of State medicine ; and to protect the material interests of the veterinary medical profession."

Subjects of vital importance to the profession and to the live stock interest of the State were discussed, and the following resolutions were adopted :

"WHEREAS, The intelligent diagnosis and treatment of diseases of domestic animals calls for the most scientific training and acute perception, that are acquired only by mastering the various branches of medicine, and their application to the prevention and cure of diseases ; and

"WHEREAS, The veterinary profession is recognized by every civilized country as one of the most learned, and most of these countries give their commissioned army veterinary corps the same rank and pay as held by other cavalry officers ; and

"WHEREAS, There is at present no law in Mississippi for the recognition of the veterinary profession, and the protection of domestic animals against the practice of unqualified men, while many of the other States have such laws,

"Resolved, That the legislature of Mississippi should create a State Board of Veterinary Medical Examiners, and require practitioners of veterinary medicine to secure license for the practice of their profession.

"Resolved, further, That a copy of these resolutions be sent to the Governor with the request that he empower the present legislature (at its short term session) to consider such a law. We do not ask that a man hold a veterinary diploma before he be allowed to practice, but we do claim, without fear of successful contradiction, that the profession merits it, and that the

vast live stock interest of Mississippi demands that men offering their services for professional work should be required to qualify for this work by passing an examination on foundation principles underlying their profession.

"WHEREAS, The live stock interest of Mississippi represents a capital of over fifty million of dollars, and contribute largely to the taxes of the State ; and

"WHEREAS, The demand is now being made for a better class of work stock, beef and dairy cattle, and for superior pork, mutton, wool, bees, and poultry ; and

"WHEREAS, Our domestic animals are subject to numerous fatal contagious and non-contagious diseases, many of which are absolutely preventable ; and

"WHEREAS, At present there are no efficient laws to prevent said diseases, and no sanitary board empowered to issue suitable regulations to prevent and suppress same, and no veterinarian whose duty it is to investigate reported outbreaks of such diseases ; and

"WHEREAS, Congress has been asked an appropriation of five hundred thousand dollars to be expended by the Federal Government in coöperation with the State Live Stock Sanitary Boards of the various Southern States in moving further south the Texas fever quarantine line, with object of eventually ridding Mississippi and the other Southern States of the dreaded disease, Texas fever ; thereby removing the immense tax that the Southern stockman now pays the North in marketing his cattle ; therefore be it

"*Resolved*, That it is the sense of the Mississippi State Veterinary Medical Association that the present State Legislature should enact a law creating a Live Stock Sanitary Board and the office of State Veterinarian, whose duty it shall be to protect the health of domestic animals of the State, and to determine and employ the most efficient and practical means for the prevention, suppression and eradication of dangerous contagious diseases of such animals.

"*Resolved*, That the Governor of Mississippi, through our Secretary, shall be informed of the action of this Association, and be requested to invite the attention of the Legislature to the urgent need of such legislation and sufficient appropriation to execute these laws."

In accordance with these resolutions, two proposed bills were drawn up by the Association. These bills have been approved by Governor Vardaman. This is our short term of the

Legislature and our law prescribes that only such measures may be considered as require support fund and such as the Governor deems necessary. These measures have been introduced into the Legislature by the Hon. J. W. Norment, and are now before the Agricultural Committee of the House. We are hopeful of securing enactment of both bills.

The business of the Association was transacted in the office of the Professor of Veterinary Science in our commodious new Agricultural Building. At noon Mrs. Robert entertained at luncheon the members of our Association. In the afternoon the business meeting was very informal. Ways and means of advancing the interest of our profession were discussed. It was decided to have a thousand copies of our proposed laws printed and distributed among the stockmen of the State. It was urged that every one bring all his influence to bear on the Legislature for enactment of these measures.

The Executive Committee of the Association is empowered to select the time and place of meetings, but the Association is required to hold at least one meeting annually. The first annual meeting will occur in August (the exact date has not been determined) in the demonstrative lecture room of the Veterinary Department at the Agricultural College. At the same time the State Farmers' Institute, the Southern Live Stock Association, and one of the State Teachers' Institutes convene at the College.

After adjournment of the Association, the State College buildings—new barns, dairy, creamery, Agricultural building, State chemical laboratories, etc., were open to inspection. The improved breed of cattle were an interesting sight (about one thousand registered cattle have been imported into the State and immunized against Texas fever by the Veterinary Department of the College, and only two died from tick infection). Incidentally it might be mentioned that the last Mississippi Legislature appropriated over a quarter of a million dollars for support and improvement of this College.

Members of the Association expressed themselves as being highly pleased with this, our first meeting, and it is thought that our next meeting will be better attended.

J. C. ROBERT, *Secretary*.

#### TWIN CITY VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the above Association was held at the Holmes Hotel, Minneapolis, Minn., Feb. 8, 1906. There were present Drs. Price, Kirby, Dallimore and Ward, of St.



Paul; Reynolds and Beebe, of Experiment Station; Cotton and Sexton, of Minneapolis, and Ketchum, Harrison, Niven, Irons and Schumway, of South St. Paul. Visiting veterinarian, C. A. Mack, of Stillwater.

After the customary dinner, the meeting was called to order by Dr. Ketchum, Chief Inspector of South St. Paul.

Dr. A. B. Niven presented a paper, "The Ideal Veterinarian of the Future,"\* the discussion following being general, in which all present participated.

Dr. W. L. Beebe reported on veterinary literature and medicine.

It being the annual meeting, the following gentlemen were elected:

President—Dr. M. J. Sexton, Minneapolis.

Vice-President—Dr. A. B. Niven.

Secretary—Dr. S. H. Ward.

Directors—Drs. Price and Irons.

It was decided that a semi-annual banquet be given by the Association to its members and their wives, the banquet to be held alternately between St. Paul and Minneapolis.

S. H. WARD, *Secretary*.

#### ILLINOIS VETERINARY MEDICAL AND SURGICAL ASSOCIATION.

The 17th annual meeting was called to order January 17th, at two o'clock P. M., by President F. J. Bliss, of Earlville. The minutes of the previous meeting were read and approved. The election of officers was postponed until the following day. There were two applications for membership: A. C. Tillman, Earlville, and V. O. Hanes, Stanford, who were unanimously elected, and introduced by Dr. S. H. Swain.

Dr. C. M. Walton read a paper on "Laryngitis," which was highly praised by Dr. S. H. Swain. The paper brought out quite a discussion between Drs. Martin and Swain on the croupous form of the disease.

Dr. Smith, of Quincy, presented a paper on "Diseases of the Oesophagus," which was discussed with good results.

Dr. Hunt's thesis on "Prevalent Diseases of Cattle," was conceded to be a masterpiece, and went far to show that the Osler theory was strictly contraindicated in his case.

The meeting then adjourned until 9 A. M. the following day,

\* Will be published in an early number of the REVIEW.

when Dr. S. H. Swain read a voluntary report of a castration of a cryptorchid horse and the removal of an enormous cystic enchondromatis testicle. The report of this case will be found under "Reports of Cases."

A communication and paper on "Lymphangitis" from Dr. Tyrrell was read.

Dr. N. P. Whitmore presented a paper on "Summer Sores," which was thoroughly discussed. Valuable suggestions were offered by Drs. Swain and Hunt as to treatment by a combination of gasoline and camphor. Dr. Bliss favored tr. benzoin and Dr. Martin advocated hypodermic injections of pyoktanin blue.

Dr. Martin read a very valuable paper on the "Actual Caution," thoroughly covering all its indications.

Dr. Marsh's paper on "Azoturia" evoked considerable discussion by Drs. Martin, Hunt and Marsh.

The meeting then being opened for general discussion and reports of cases, many valuable points concerning treatment of various diseases were learned. The use of the catheter was objected to by several practitioners, who cited numerous cases where the use of the catheter aggravated the symptoms and retarded the recovery of patients.

The following officers were then elected for 1906:

President—Dr. F. J. Bliss, Earlville.

First Vice-President—Dr. N. P. Whitmore, Gardner.

Second Vice-President—Dr. J. Groves.

Secretary—Dr. C. M. Walton, Rantoul.

Treasurer—Dr. V. G. Hunt, Arcola.

Committees appointed were as follows: Arrangements—Drs. V. G. Hunt, S. H. Swain; Programme—Drs. F. J. Bliss, C. M. Walton, V. O. Hanes; Membership—Drs. W. A. Swain, S. D. Brown, R. W. Braithwaite, J. Marsh and W. J. Martin.

Decatur was the city chosen for the semi-annual meeting.

The meeting adjourned at one o'clock P. M., after which a surgical clinic was held at the hospital of Dr. S. H. Swain, where a number of patients were successfully operated upon for various ailments.

C. M. WALTON, *Secretary*.

#### RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association was held at the Hotel Dorrance, Providence, Thursday evening, January 18, 1906, and was called to order by President Pollard at 7.30, and

the following veterinarians responded to their names: Drs. S. T. Dunn, F. de M. Bertram, C. T. Frey, J. T. Cunningham, J. S. Pollard, J. A. McLaughlan, T. H. Monahan and T. E. Robinson.

After the minutes of the previous meeting were read and approved, the various committees submitted their annual reports. The Legislation Committee reported progress, and also declined to serve the Association longer, owing principally to lack of time required in the work. After a vote of thanks, this committee was discharged and a new one appointed. It was voted to hold a clinic at Dr. Pollard's Hospital in Providence, Saturday, February 10th, to be followed by a banquet at the Newman Hotel at 8.30 P. M.

The business and discussions consumed so much time, the reading of Dr. J. A. McLaughlan's paper, entitled, "The Veterinary Profession and the Single Tax," was postponed until February 10th, when it will be presented immediately after the banquet. The election of officers resulted as follows:

President—Dr. J. A. McLaughlan, Providence.

Vice-President—Dr. F. de M. Bertram, Newport.

Secretary—Dr. T. E. Robinson, Westerly.

Treasurer—Dr. J. T. Cunningham, Providence.

T. E. ROBINSON, *Secretary*.

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#### MEDICAL ASSOCIATION OF THE GRAND RAPIDS VETERINARY COLLEGE.

The regular meeting was held Thursday, January 18, in the College Auditorium, being well attended. After reading the minutes of the previous meeting, the regular programme was taken up and disposed of. Mr. Tinnus, '06, presented a well-prepared paper on the subject of "Prolapsus Uteri," which was quite practical, mentioning the procedure to be taken in a simple case as well as a complicated one where it was necessary to amputate the organ. After being discussed the paper was accepted and Mr. Tinnus was highly complimented.

Mr. Scherz, '06, read a paper on "Feeds and Feeding." He showed that there were three necessary ingredients to be considered in the feeding of our domestic animals in order to keep them healthy, mentioning pure water, pure air and nutritious food. He also dealt with the important elements of food, which are the proteids and carbo-hydrates; the first being the energy-producer and the latter the heat-producer. Other phases of

the subject were dealt with and after a thorough discussion the paper was heartily accepted.

Mr. Brown, '06, then followed with a paper upon "Paralysis of the Posterior Extremities of a Dog." The first symptoms noticed were dullness and uselessness of posterior extremities. After a thorough examination, it was discovered that the rectum was unduly packed with faecal matter, which was causing great pressure upon the nerves in that region. Rectal injections were given and followed by a carthartic and nerve stimulants.

President Coomer then called upon Dr. Kennedy, '04, of Iowa, to say a few words. He talked upon the subject of "Nasal Polypi," giving his methods of removal and treatment. He mentioned a case which came under his observation, where the polypus grew from the turbinated bones, and extended from the nostril. It was removed by him, the horse making a complete recovery. He also discussed corn-stalk disease, which is so common in the Western States, saying that liberal salting of stock was regarded as the exciting cause. Dr. Kennedy's talk was highly appreciated by all, as shown by the hearty applause given him on resuming his seat.

The President then announced the programme for next meeting, when papers will be read by Messrs. Knox, Menold and Craig. The meeting then adjourned.

J. M. MILLER, *Secretary*.

#### HAMILTON COUNTY VETERINARY ASSOCIATION.

The twentieth regular meeting of this Association was held Wednesday, Dec. 13, 1905, at the Cincinnati Veterinary College, Dr. W. A. Axby presiding. Fifteen members and several visitors were present. After an address by the President and the transaction of some routine business, the Association retired to the clinical amphitheatre to witness the following clinics: Arytenectomy, by Dr. J. L. Axby; peroneal tenotomy, by Dr. C. H. Tiffin; poll-evil surgery, by Dr. W. A. Axby; oöphorectomy, by Dr. Frank Hahn; pathological specimens, by Dr. F. B. Drake; nitrous oxide anæsthesia in the horse and dog, by Dr. L. P. Cook.

A large and interesting programme has been arranged for the next meeting of the Association, which will be held at the same place on Wednesday, Feb. 28, 1906.

LOUIS P. COOK, *Secretary*.



## SOUTHERN AUXILIARY OF THE CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

*(Abstracted from the Western Veterinarian for January.)*

The annual meeting was held on Wednesday, January 10, 1906, at the Hotel Nadeau, Los Angeles, Cal., and was called to order by the President, Dr. W. E. D. Morrison, of Los Angeles.

Roll-call showed the following members present: Drs. Morrison, Whittlesey, Dell, Dawdy, Oliver, Edmons, Shaw, Young, Howard, Creely, Archibald, Rowland, Alexander, Boucher, Tyler, Connolly, Fenimore, Fox, Tritton and Rayen.

The reports of Secretary and Treasurer show the Association to be in a flourishing condition both financially and numerically.

The nomination and election of officers for the ensuing year resulted as follows:

President—Dr. R. T. Whittlesey, Los Angeles.

Secretary and Treasurer—Dr. J. A. Edmons, Los Angeles.

Dr. W. A. Boucher, a graduate of the Ontario Veterinary College, class of 1898, located at Fullerton, Cal., was duly elected to active membership.

Dr. Wm. Anderson, a graduate of the New York Veterinary College, located at Los Angeles, Cal., was proposed for membership.

Dr. R. T. Whittlesey being on the programme for a paper was called upon and responded by reading an exceedingly interesting and practical essay on the use of anæsthetics. The subject matter being one in which every practitioner is vitally interested, all present took part in the discussion that followed.

After transacting some routine business, the meeting adjourned to meet at Dr. R. T. Whittlesey's hospital, where the following operations were witnessed: Dressing a mule's foot that several days previously had been operated on for nail puncture of the flexor pedis tendon, by Dr. R. T. Whittlesey. The Doctor described the operation he had performed and then demonstrated his method of dressing the operative wound. The passing of Phillips' Stomach Tube for the relief of gastric flatulence, choke, etc., was demonstrated by Dr. H. D. Fenimore.

Dr. R. T. Whittlesey then performed oöphorectomy on a bitch under chloroform anæsthesia in a very skilful manner and at the same time demonstrated the convenience of a canine operating table that he had lately constructed.

This was followed by the operation of plantar neurectomy for the relief of foot lameness by Dr. R. T. Whittlesey. The operation was performed in the standing position, local anæsthesia of the part having been obtained by the use of stovaine. The animal's leg had been antiseptically prepared for the operation and every antiseptic precaution possible was observed during the operation. The operative wounds were sutured with wire and a permanent antiseptic dressing applied. This operation was exceedingly interesting, not only for the reason that it was skilfully performed, but because, for the first time the majority of the members present witnessed the effects of stovaine as a local anæsthetic. All present were extremely gratified with the action of the drug. At the conclusion of the clinic, which was voted a great success, the members gathered round a banquet where the reputation the Southerners have gained for hospitality was certainly exemplified. Following the physical gratification of the members, which was brought about by the ingestion of viands most pleasing to the sense of taste, and the *judicious* imbibition of rare and delightful liquids, a mental entertainment, consisting of witty and interesting speeches was indulged in. Dr. W. E. D. Morrison, of Los Angeles, acted as toastmaster, and he filled that difficult position in a manner seldom equaled and never excelled. The doctor's opening remarks, which dealt feelingly with the history of the past and the programme for the future, were interspersed with witticisms and were certainly brilliant and sparkling in character.

It was a grand effort and was highly appreciated by those present; more especially by the Northern members, who seldom or never had heard the doctor in his natural sphere before. Following the toastmaster's speech, the different members present were called upon in turn and a late hour saw the close of one of the best and most entertaining meetings that has ever been held on the Pacific Coast.

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#### CALIFORNIA STATE VETERINARY MEDICAL BOARD.

A meeting of the Board was held on Wednesday, January 10, 1906, at the Hotel Nadeau, Los Angeles, Cal. Members present were: Dr. David F. Fox, Sacramento, President; Dr. E. J. Creely, San Francisco, Secretary; Dr. W. L. Oliver and Dr. W. E. D. Morrison, Los Angeles.

The Board examined the credentials of a number of appli-

cants for State certificates with the result that two candidates qualified, viz., Dr. J. S. Spangler, a graduate of the Chicago Veterinary College, 1885, located at Los Angeles, and Dr. R. T. Gettings, a graduate of the Chicago Veterinary College, 1905, located in Pomona. Several other applications were held over until next meeting on account of some irregularity in their credentials.

There being no further business, the Board adjourned.

### NEWS AND ITEMS.

THE VETERINARIAN AND LIVE-STOCK COMMISSIONERSHIP. — It seems to be pretty well understood that Mr. F. W. Hodson has resigned the above position, and that a successor becomes necessary to be appointed in his stead. The position is an important one and the suggestion has been made that the work done under the above gentleman's direction should be merged in future with that of the Veterinary branch and all administered by the one head, who would of necessity be a veterinarian, similar to the procedure followed in the Bureau of Animal Industry at Washington. To this suggestion we are opposed for reasons as follows: The present V. D. G. well and favorably known throughout Canada, finds the work of his branch a severe tax on his physical powers. His branch even yet, in spite of the immense amount of constructive work done by him, being in the formative stage it yet lacks a meat inspection division and it is neither just or advisable to unduly tax a public official because he is willing or capable. Generally speaking, however, the appointment of a veterinarian would be undesirable. The men capable of filling the dual position are so few as to be practically non-existent, for while the present V. D. G. is fully capable, it would be an unsafe precedent to establish due to the meagre supply of the properly trained veterinarians. It does not yet seem to have dawned upon the teaching portion of the veterinary or agricultural professions that the ideal animal husbandman is the veterinarian who has been properly educated and trained; up to date the average veterinarian's education is narrow and lopsided. The two position it seems to us must then remain entirely separate and it will not be amiss to point out, now that the time is opportune, the advisability of making the appointment of a deputy livestock Commissioner with headquarters West of the Great Lakes. . . . (*Farmers' Advocate, Winnipeg, Manitoba, Feb. 7.*)

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## VETERINARY MEDICAL ASSOCIATION MEETINGS.

Secretaries are requested to see that their organizations are properly included in the following list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	Aug. 21-24, '06	N. Haven, Ct.	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.....	July 12-13, '06.	Asbury Park.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	.....	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	Sept. 11-12-13	Buffalo.	G. T. Stone, Binghamton.
Schuylkill Valley V. M. A....	June 20.	Reading.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Monthly.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	March 30.	Dallas.	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	2d Wed. April.	Belfast.	R. E. Freeman, Dexter.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n....	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y. -A. V. C....	April, 1906.	141 W. 54th St	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n.....	July 12, 1906.	Bloomington.	F. H. Barr, Pana.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Sheboygan.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	.....	Decatur.	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n....	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. April	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.	W. H. Gribble, Wash'n C. H.
Western Penn. V. M. Ass'n....	1st Wed. ea. mo	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n....	July 12, 1906.	Roch t'r, N. Y.	J. H. Taylor, Henrietta, N. Y.
Iowa State V. M. Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n...	July, 11, 12, '06	Minneapolis.	C. A. Mack, Stillwater.
Pennsylvania State V. M. A....	March 6 and 7	Philadelphia.	C. J. Marshall, Philadelphia
Keystone V. M. Ass'n.....	2d Tues. Feb.	Philadelphia.	A. W. Ormeston, 102 Her- man St., Germantown, Pa.
Colorado State V. M. Ass'n....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	June and Dec.	Providence.	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n....	.....	.....	J. A. Winsloe, Cooperstown.
California State V. M. Ass'n....	Mch. Je. Sep, Dec	San Francisco	C. H. Blemer, San Francisco.
Southern Auxiliary of Califor- nia State V. M. Ass'n.....	Jan, Apl. Jy, Oct.	Los Angeles.	J. A. Edmons, Los Angeles.
South Dakota V. M. A.....	July, 1906.	Brookings.	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jensen, Weeping Water
Kansas State V. M. Ass'n....	Jan. 8-9, '07.	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médéciale Veterinaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm La- val Un'y Mon.	J. P. A. Houde, Montreal.
Alumni Association A. V. Col..	April each yr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A....	.....	Mon. & Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Monthly.	Pullman, Wa.	Wm. D. Mason, Pullman.
Indiana Veterinary Association.	.....	.....	E. M. Bronson, Indianapolis.
Iowa Nebraska V. M. Ass'n....	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n....	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	.....	.....	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A....	.....	Cincinnati.	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n..	August, 1906.	Agricultural College.	J. C. Robert, Agricultural College.



## PUBLISHERS' DEPARTMENT.

THE Publishers would call *especial* attention to the *first* advertisement at the foot of this page for two reasons. First, because the other two will attract those looking for what is advertised, and second, because the *importance* of Dr. Strauss' request may not at first be as apparent as upon second consideration.

The Doctor is working in a noble cause for humanity's sake in making a life study of this dread disease, and when veterinarians furnish him with a case diagnosed as cancer in an animal, their diagnosis is confirmed by a master, if correct, or light is thrown onto the true nature of the malady if it prove not to be cancer; and we urge all our readers to be on the alert for material such as Dr. Strauss desires.

### AN IMPORTANT DECISION.

ICHTHYOL TRADEMARK.—The Federal Tribunal of Lausanne, Switzerland, recently gave its decision in an appeal against the decision of the Court of Appeal of Berne in the action brought by the Ichthyol Co., Hamburg, proprietors of the trademark "Ichthyol," marketed in the United States by Merck and Co., of New York, to prohibit Luedy & Co., Burgdorf, from infringing the trademark. The Lausanne Court rejected the defendants' appeal and confirmed the former judgment, which ordered that the defendant firm should no longer use for their products names containing in any way the characteristic word "Ichthyol." It was proved that the trademark "Ichthyol" is the legitimate property of the Ichthyol Co., and that only this company is able to supply the sulphur preparation known under the name "Ichthyol." The defendants had pretended to supply the same preparation as supplied by the Ichthyol Co., but the Court stated that their product differed essentially in composition from the genuine article.—*Chemist and Druggist*.

### ZENOLEUM VETERINARY ADVISER.

A COPY of this interesting and well-printed book containing sixty-four pages of valuable advice, prepared by the leading veterinarians in the world for live stock owners, and printed at a great expense by the Zenner Disinfectant Company of Detroit, Michigan, will be sent to you and to your friends, upon request, absolutely free of all cost.

If you want a copy of this book, send your name and address to the Zenner Disinfectant Company, 24 Bates Street, Detroit, Michigan, at once.

### AFFLICTED ANIMALS WANTED.

WANTED.—Horses, Mares, Cats, Dogs, etc., afflicted with Cancer. Address Dr. S. Strauss, 111 W. 119th St., New York City.

### REWARD OFFERED.

REWARD offered for the name of a suitable district to start a practice. Replies sent to "REWARD," care AMERICAN VETERINARY REVIEW, 509 W. 152d St., New York.

### POSITION WANTED.

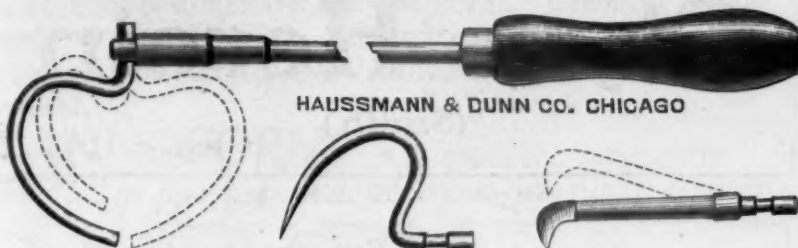
WANTED.—Position as Assistant Veterinarian by a qualified man. Best of references both Business and Professional. Address GEO. A. CAMPBELL, 860 Genesee St., Buffalo, N. Y.

### REVIEWS 1905 WANTED.

The REVIEW publishers will pay 25 cents a piece for copies of the REVIEW of January 1902, October, 1903, January, 1904, February, 1904, and July, September and October, 1905. Address ROBT. W. ELLIS, Bus. Mgr., 509 West 152d Street, New York.

Received the only Award and Medal on Veterinary Surgical Instruments at the World's Expositions, St. Louis, 1904, Chicago, 1893.

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For the treatment of  
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**Bronchitis**  
**Laryngitis** and  
**Pneumonia**  
Etc.

Remarkably efficacious, and surprisingly prompt in checking all incessant, hacking and paroxysmal  
**COUGHS**

#### HORSES.

One ounce every two or three hours is the usual effective dose in the ordinary cases. In the more acute or aggravated cases, begin the first day's treatment with two ounce doses.

#### DOSE.

#### DOGS.

❖ Ten drops to a half teaspoonful at intervals of two to four hours is the average dose. For older or larger dogs, or in very acute stages, full teaspoonful doses should be given.

#### NOTE.

To avoid substitution in prescribing Glyco-Heroin—(Smith) it is advisable to always order and demand an original sixteen ounce bottle. • • •

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**TANNOFORM.** An excellent astringent. *Internally*, in diarrhea and infectious intestinal catarrh of cattle and horses. *Externally*, in sores, as a vulnerary antiseptic and drying agent. Free from odor and twice as bulky as iodoform.

**PYOKTANIN.** An efficient pus-destroyer and analgesic. In wounds of every character, in corneal ulcers, purulent inflammations, malleanders, horse-pox and purulent conjunctivitis.

Literature on application.

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The only safe and successful substitute for the Thermo-Cautery ; Recognized and accepted by the Veterinary Profession generally of the United States and Canada, and sold only to Veterinarians.

### ADVANTAGES.

- Can be applied in a few seconds.
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## SCIENTIFIC—NOT EMPIRICAL

*Antiphlogistine* was built up, or created, that we might have a medium by which the long established physical principle of osmosis and dialysis could be utilized to meet and scientifically counteract the various abnormal conditions common to every degree of inflammation.

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It is the custom of many veterinarians and trainers after racing or exercising their horses, to envelop the legs of the animal from fetlock to knee in *Antiphlogistine*, applied warm and thick, covered with absorbent cotton and roller bandages. This practice keeps the circulation active, gives strength to the vessels and tendons, prevents swelling, soreness and possible acute tendonitis.

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### CONSISTING OF

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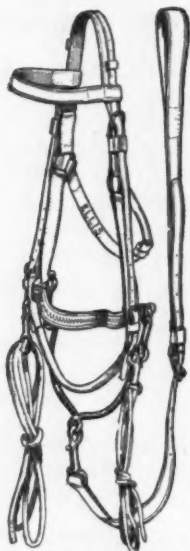
Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession. The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow; the cutting grooves on each, leaning in the direction that it rolls; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction.

The whole makes a handsome, practical, and strictly scientific outfit, which can be carried in a neat case, smaller than a dental roll, and very much lighter. The above described instrument, although patented three years, and in actual use for more than three years, has not been before offered to the veterinary profession, as the patentee desired to perfect every mechanical detail, and get it well beyond the experimental stage, before placing it upon the market; and he now feels that it has withstood tests that merit it a place among the standard instruments of the age.



### AND THE

#### "Combination" Veterinary Dental and Surgical Halter.



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The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

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After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

For price of Outfit, or either Halter or Float, address T. C. D. F. Station M. New York.

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For HORSESHOERS and VETERINARIANS

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### EUCALYPTUS COMPOUND.

For the treatment of Coughs, Bronchitis, Laryngitis, Pneumonia, etc., in horses, cattle and dogs.

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A POSITIVE REMEDY  
—IN—  
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Doctor, when you have a Horse or Dog suffering from

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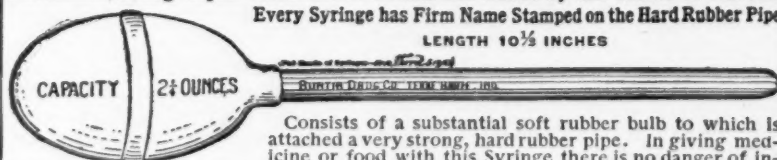
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RECORD.	TEMPERATURE	REMARKS.
Animal: <u>Mare</u> Owner: <u>S. Sears</u> Age: <u>7 yrs</u> Weight: <u>1200 lbs.</u>	Date: <u>23</u> <u>24</u> <u>25</u> Pulse: <u>90</u> <u>80</u> <u>85</u> Resp: <u>24</u> <u>28</u> <u>26</u>	The indication for the treatment of this patient had to commence with ordinary drugs intended to combat against the disease, but as a result the symptoms became steadily worse. On the second date (24th) 10 cc of Tallianine was administered intravenously and on the 25th administered 10 cc more. The result was a steady improvement in the patient's condition. The temperature fell to 101° and the patient began to eat. On the 26th the patient was given another 10 cc of Tallianine, which brought the temperature down to 101°.
CONDITION. Mare was in good working condition, and not at all thin.		
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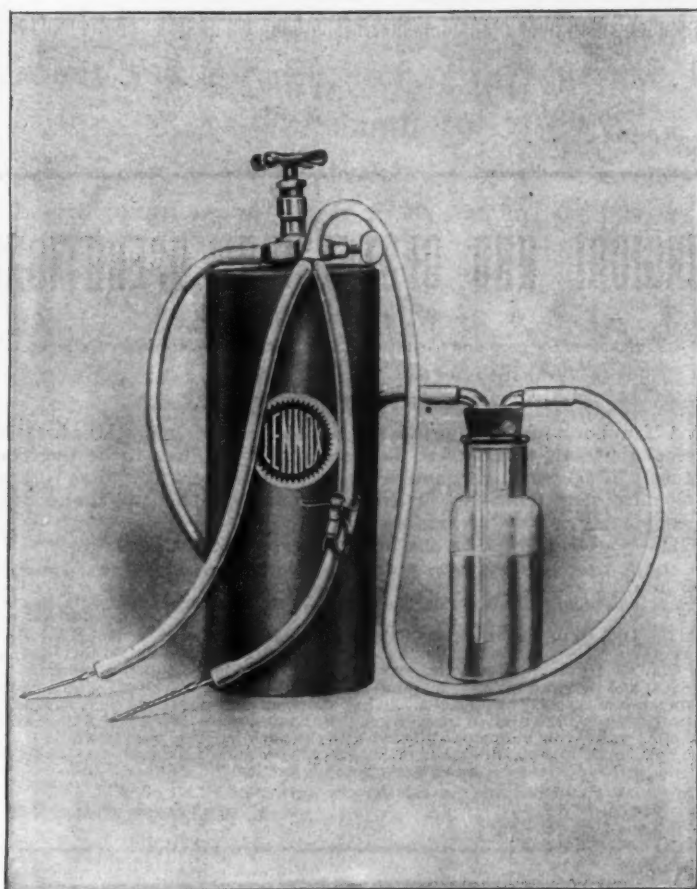
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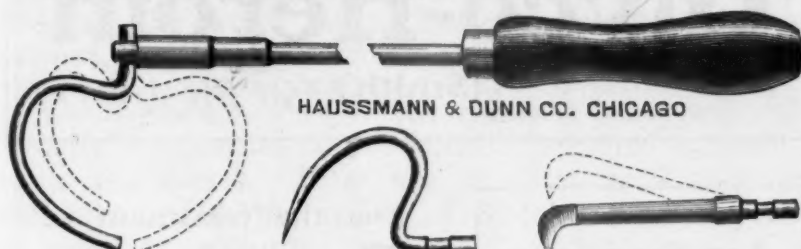
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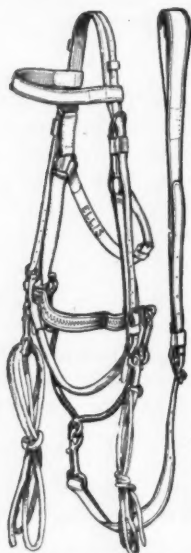
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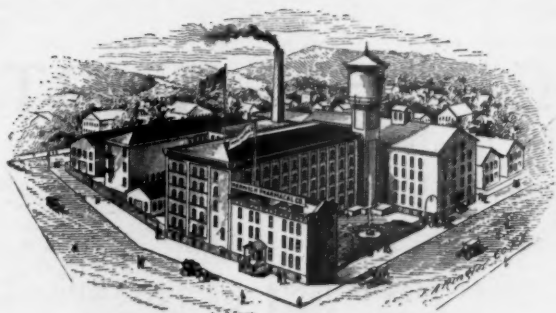
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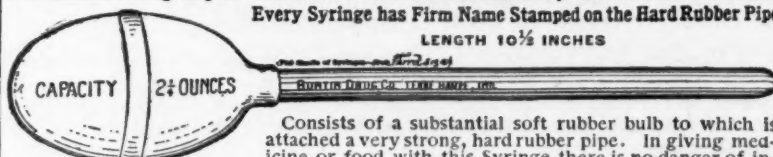
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142	Eserine Salicylate.....	1 gr.	1 25	
143	Eserine Salicylate.....	1 1/2 grs.	1 90	
144	Eserine Compound.....		1 00	
	{ Eserine Salicylate.....	1-4 gr. }		
	{ Pilocarpine Muriate.....	1-2 gr. }		
	{ Strychnine.....	1-8 gr. }		
145	Eserine and Pilocarpine.....		1 50	SAL-LISTER (A SOLUBLE POWDER.)
	{ Eserine.....	1-2 gr. }		
	{ Pilocarpine.....	1 gr. }		
146	Colic (Forbes).....		2 75	
	{ Eserine Salicylate.....	1 gr. }		
	{ Pilocarpine Mur.....	3 1/2 grs. }		
147	Hyoscyamine Sulphate, Crystals.....	1-8 gr.	85	
148	Hyoscyamine Sulphate, Crystals.....	1-4 gr.	1 30	
149	Morphine Sulphate.....	1 gr.	19	
150	Morphine Sulphate.....	1 1/2 grs.	27	
151	Morphine Sulphate.....	2 gr.	33	SAL-LISTER (A SOLUBLE POWDER.)
152	Morphine Sulphate.....	2 1/2 grs.	37	
153	Morphine Sulphate.....	3 grs.	50	
154	Morphine and Atropine.....		35	
	{ Morphine Sulph.....	1 1/2 grs. }		
	{ Atropine Sulph.....	1/4 gr. }		
155	Morphine and Atropine.....		35	
	{ Morphine Sulph.....	1 1/2 grs. }		
	{ Atropine Sulph.....	1/4 gr. }		
156	Morphine and Atropine.....		40	
	{ Morphine Sulph.....	2 grs. }		
	{ Atropine Sulph.....	1-4 gr. }		
157	Morphine and Atropine.....		45	SAL-LISTER (A SOLUBLE POWDER.)
	{ Morphine Sulph.....	2 1/2 grs. }		
	{ Atropine Sulph.....	1-4 gr. }		
158	Nitroglycerine.....	1-10 gr.	14	
159	Nitroglycerine.....	1-5 gr.	17	
160	Pilocarpine Muriate, Crystals.....	1-2 gr.	55	
161	Pilocarpine Muriate, Crystals.....	1 gr.	90	
162	Pilocarpine Muriate, Crystals.....	1 1/2 grs.	1 10	
163	Sodium Arsenite.....	1 gr.	12	
164	Strychnine Sulphate.....	1-4 gr.	12	
165	Strychnine Sulphate.....	1-2 gr.	13	SAL-LISTER (A SOLUBLE POWDER.)
166	Strychnine Sulphate.....	1 gr.	14	
167	Veratrine Muriate.....	1-4 gr.	12	
168	Veratrine Muriate.....	1-2 gr.	14	

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Case No. \_\_\_\_\_

RECORD.	TEMPERATURE												REMARKS.
	Date.	23	24	25	26	27	28	29	30	31	1	2	
Animal: <u>Mare</u>	Pulse:	70	60	54									
Owner: <u>S. Sparks</u>	Resp:	24	38	14									
Age: <u>7 yrs</u> Weight: <u>1200 lbs.</u>													
CONDITION.													
Mare was in good working condition, and not at all thin.													
DIAGNOSIS.													
<u>Influenza</u>													
TREATMENT.													
On first date, used ordinary purgatives, but temperature continued to over 104°. On second day gave 1 tube 10 cc. Tallianine. Which brought temperature down to 101°.													
RESULTS.													
Cured and ready for labor on the 29th.													

REMARKS: As indicated in the treatment this patient had to commence with ordinary drugs intended to combat against the disease, but as a result the symptoms became steadily worse. So on the second date (24th) 10 cc of Tallianine was administered intravenously and on the 25th action being manifest was observed. i.e. better respiration and temperature steadily coming down. The most treatment was given and patient left cured, and I have meant to work directly with no further attack. Tallianine is rapidly gaining favor with me.

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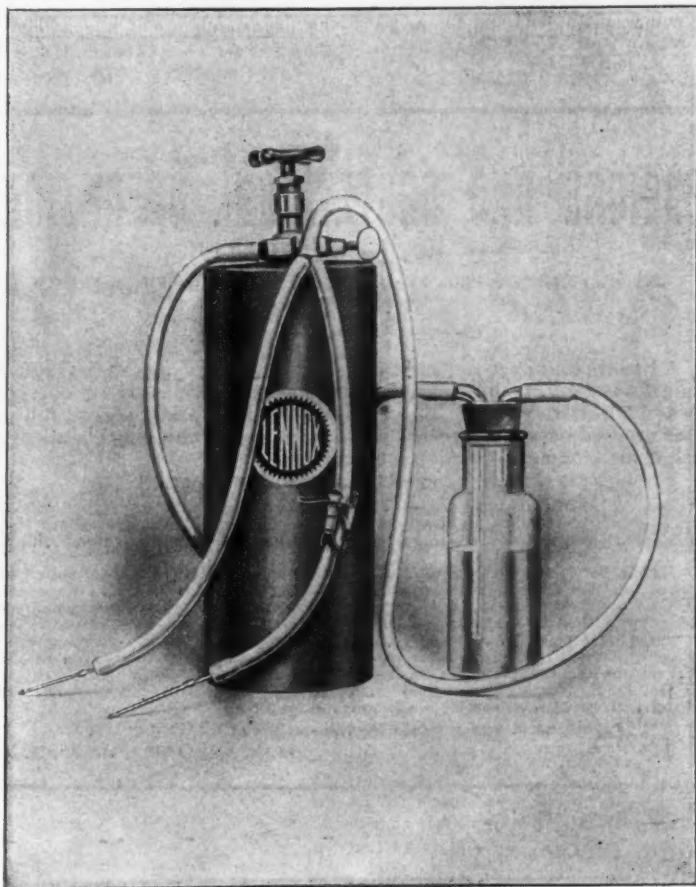
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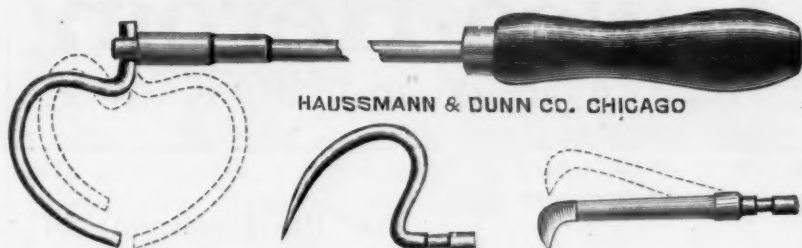
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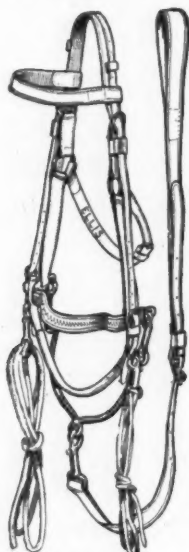
Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession. The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow; the cutting grooves on each, leaning in the direction that it rolls; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction.

The whole makes a handsome, practical, and strictly scientific outfit, which can be carried in a neat case, smaller than a dental roll, and very much lighter. The above described instrument, although patented three years, and in actual use for more than four years, has not been before offered to the veterinary profession, as the patentee desired to perfect every mechanical detail, and get it well beyond the experimental stage, before placing it upon the market; and he now feels that it has withstood tests that merit it a place among the standard instruments of the age.



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PATENTED MAY 13, 1902.

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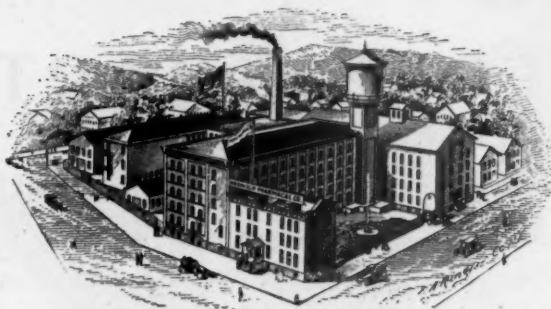
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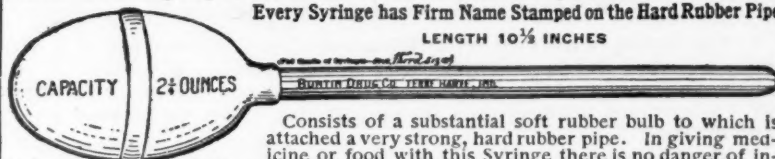
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Case No. ....

RECORD.		Date.		Pulse.		Temp.		Resp.		REMARKS.
Animal.	Owner.	23	24	25	26	27	28	29	30	
Male	S. Seale	23	24	25	26	27	28	29	30	<p>As indicated in the treatment the patient had to communicate with ordinary drugs internally to combat against the disease, but as a result the symptoms became steadily worse. As on the second date (24th) 10 cc of Tallianine was administered intravenously and on the 25th administered. Results were observed. i.e. better, defecation and temperature steadily rose. No more treatment was given and patient left cured, and I have now to work directly with the further effects. Tallianine is rapidly gaining favor with me.</p>
Age 7 yrs. Weight 1200 lbs.										
CONDITION.										
Male was in good working condition. Once shot at all this.										
DIAGNOSIS.										
Influenza.										
TREATMENT.										
On first date used ordinary febrifuge, but temperature continued to rise. On second day gave 1 tube 10 cc Tallianine, which brought temperature down to 101°.										
RESULTS.										
Cured and ready for labor on the 29th.										

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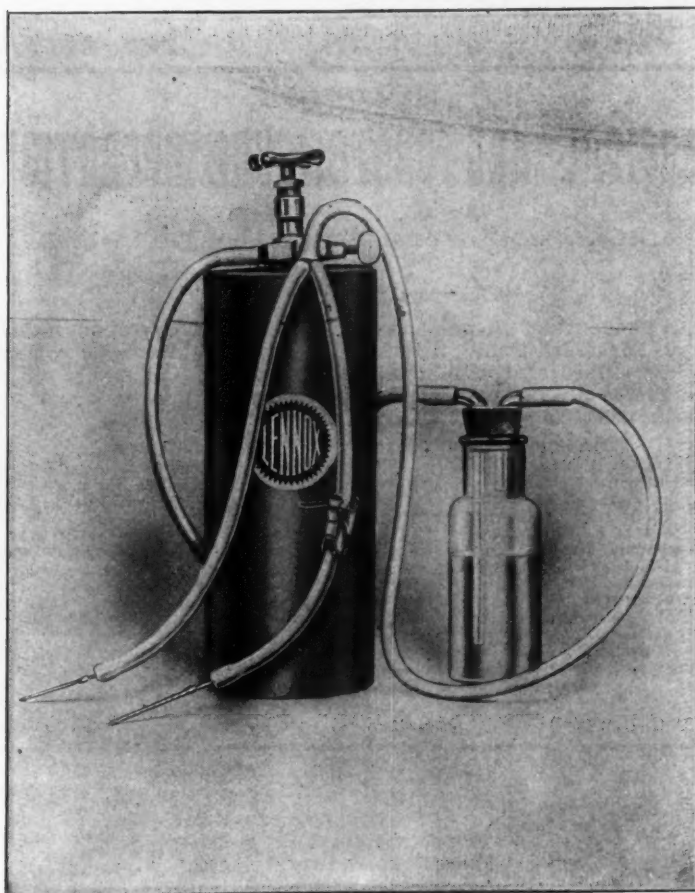
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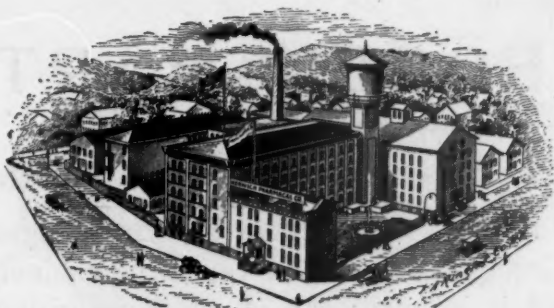
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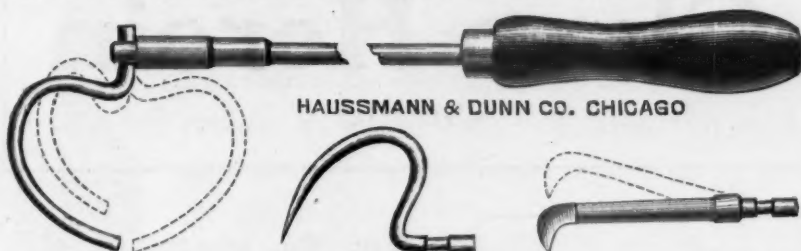
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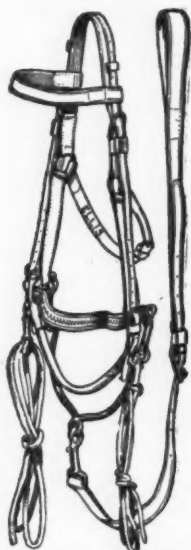
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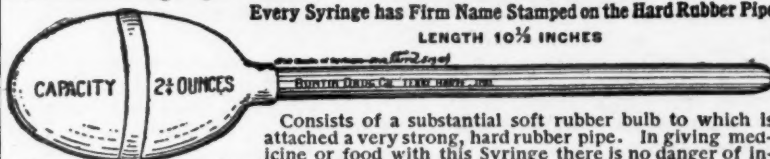
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116	Aconitine, Crystals.....	1-10 gr.	17
117	Aconitine, Crystals.....	1-6 gr.	22
118	Aconitine, Crystals.....	1-4 gr.	27
159	Arecoline Hydrobrom.....	1/2 gr.	1 00
160	Arecoline Hydrobrom.....	1 gr.	1 80
101	Atropine Sulphate.....	1-4 gr.	15
121	Atropine Sulphate.....	1-2 gr.	18
119	Atropine Sulphate.....	1 gr.	33
158	Barium Chloride Comp (Ellis).....		18
	{ Barium Chlor.....	7 grs. }	
	{ Digitaline.....	1-12 gr. }	
152	Cardiac Tonic.....		25
	{ Digitaline, Pure.....	1-10 gr. }	
	{ Sparteine Sulph.....	1-5 gr. }	
	{ Strychnine, Nitrate.....	1-8 gr. }	
103	Cocaine Muriate.....	1 gr.	35
124	Cocaine Muriate.....	1-1/2 grs.	45
125	Cocaine Muriate.....	2 grs.	55
130	Cocaine, 4 1/2 grs. for Veterinary Anesthesia.....		1 10
	(One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.)		
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	{ Morphine Sulph.....	2 grs. }	
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	{ Aconite Cryst.....	1-20 gr. }	
104	Coniine Hydrobromate.....	1-2 gr.	43
128	Coniine Hydrobromate.....	1 gr.	60
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157	Ergotine.....	4 grs.	27
113	Eserine Salicylate.....	1-4 gr.	50
133	Eserine Salicylate.....	1-2 gr.	75
134	Eserine Salicylate.....	1 gr.	1 25
135	Eserine Salicylate.....	1 1/2 grs.	1 90
106	Eserine Compound.....		1 00
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	{ Pilocarpine Muriate.....	1-2 gr. }	
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153	Eserine and Pilocarpine.....		1 50
	{ Eserine.....	1-2 gr. }	
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154	Colic (Forbes).....		2 75
	{ Eserine Salicylate.....	1 gr. }	
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146	Hyoscyamine Sulphate, Crystals.....	1-4 gr.	1 30
108	Morphine Sulphate.....	1 gr.	19
136	Morphine Sulphate.....	1 1/2 grs.	27
137	Morphine Sulphate.....	2 gr.	33
138	Morphine Sulphate.....	2 1/2 grs.	37
155	Morphine Sulphate.....	3 grs.	50
109	Morphine and Atropine.....		35
	{ Morphine Sulph.....	1 1/2 grs. }	
	{ Atropine Sulph.....	1/2 gr. }	
139	Morphine and Atropine.....		35
	{ Morphine Sulph.....	1 1/2 grs. }	
	{ Atropine Sulph.....	1/2 gr. }	
140	Morphine and Atropine.....		40
	{ Morphine Sulph.....	2 grs. }	
	{ Atropine Sulph.....	1-4 gr. }	
141	Morphine and Atropine.....		45
	{ Morphine Sulph.....	2 1/2 grs. }	
	{ Atropine Sulph.....	1-4 gr. }	
142	Nitroglycerine.....	1-10 gr.	14
143	Nitroglycerine.....	1-5 gr.	17
110	Pilocarpine Muriate, Crystals.....	1-2 gr.	55
144	Pilocarpine Muriate, Crystals.....	1 gr.	90
145	Pilocarpine Muriate, Crystals.....	1 1/2 grs.	1 10
111	Sodium Arsenite.....	1 gr.	12
112	Strychnine Sulphate.....	1-4 gr.	12
147	Strychnine Sulphate.....	1-2 gr.	13
148	Strychnine Sulphate.....	1 gr.	14
149	Veratrine Muriate.....	1-4 gr.	12
150	Veratrine Muriate.....	1-2 gr.	14

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Case No. 6 Surgeon: Dr. Harry L. Lee, M.D., V.S. Lond.  
Address: Springfield, Mass. Date: March 9<sup>th</sup> 1905

RECORD.		Date.		Pulse.		Temp.		Respiration.		REMARKS.	
		9	10	11	13	15					
Animal: <u>Box Mare.</u>											<p>This was a typical case of Purpura. I had to go 17 miles to see this case. He did not go any farther than was absolutely necessary. I did not see him on March 12/13.</p> <p>He began to eat on March 10 &amp; burbling began to leave on the 11<sup>th</sup>.</p> <p>They had all gone on the 15<sup>th</sup> with the exception of a little on abdomen.</p>
Owner: <u>J. H. Morrison</u>											
Age: <u>6</u> Weight: <u>1,320</u> lbs.											
CONDITION.											
<p>Had been through an attack of Influenza.</p> <p>General Condition Poor.</p>											
DIAGNOSIS.											
<p>Purpura Hæmorrhagica.</p>											
TREATMENT.											
<p>March 9<sup>th</sup> 1 cc. Tallianine.</p> <p>10 " " "</p> <p>11 " " "</p> <p>13 " " "</p>											
RESULTS.											
<p>Cured.</p>											

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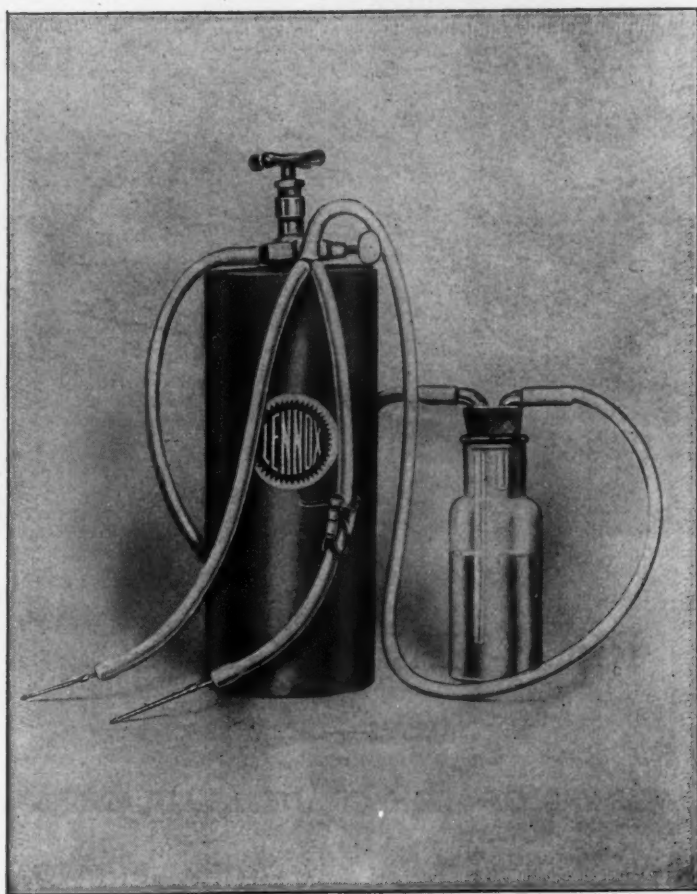
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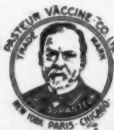
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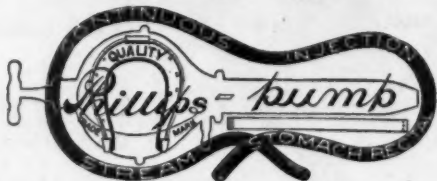
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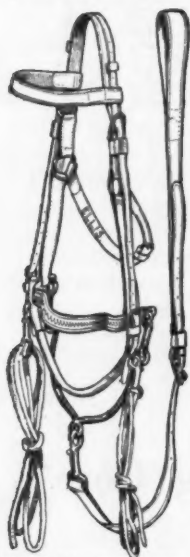
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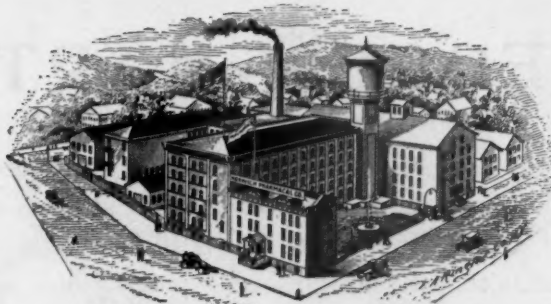
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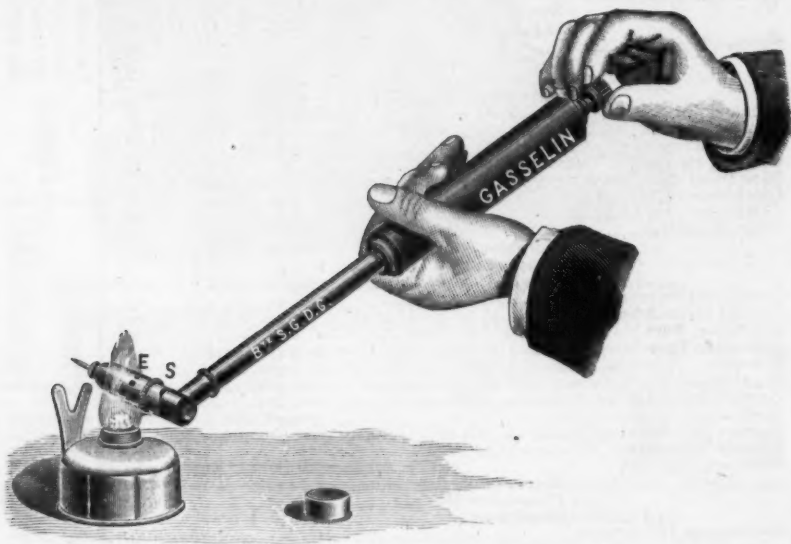
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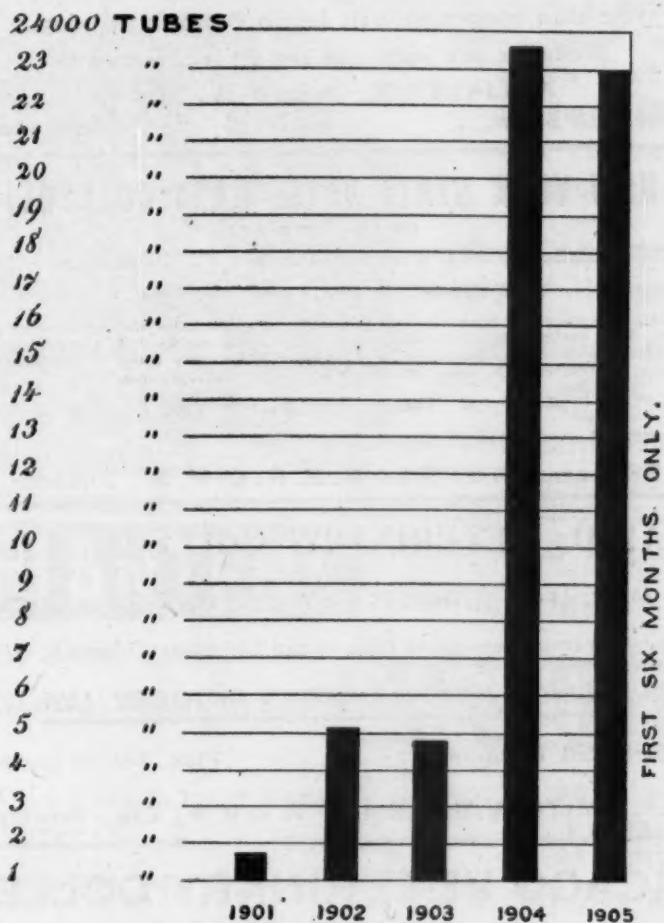
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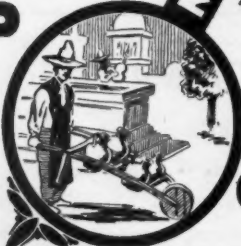
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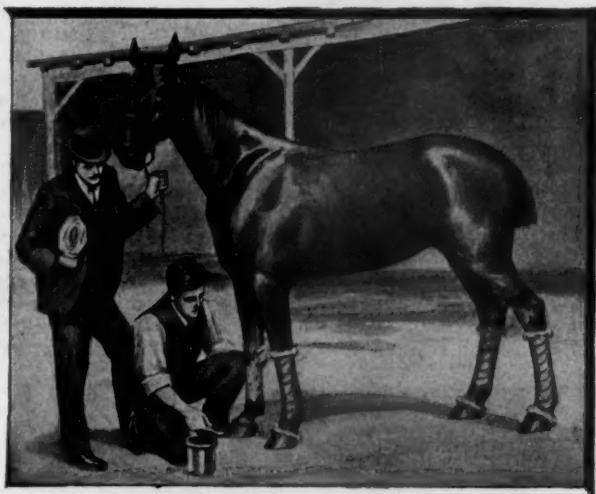
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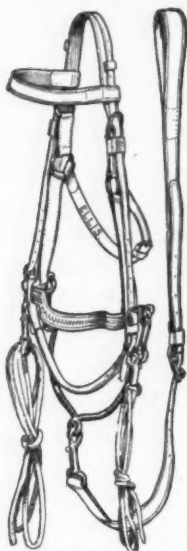
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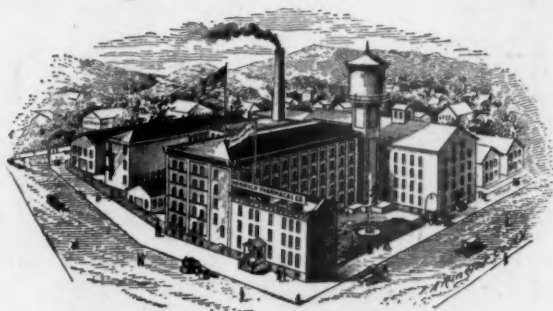
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
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Dr. ROBERT OSTERTAG, Professor in the Veterinary High School at Berlin.

AUTHORIZED TRANSLATION BY

Earley Vernon Wilcox, A.M., Ph.D., Veterinary Editor, U.S. Dept. of Agriculture Experiment Station Record.

WITH AN INTRODUCTION BY

John R. Mohler, A.M., V.M.D., Chief of Pathological Division U. S. Bureau Animal Industry.

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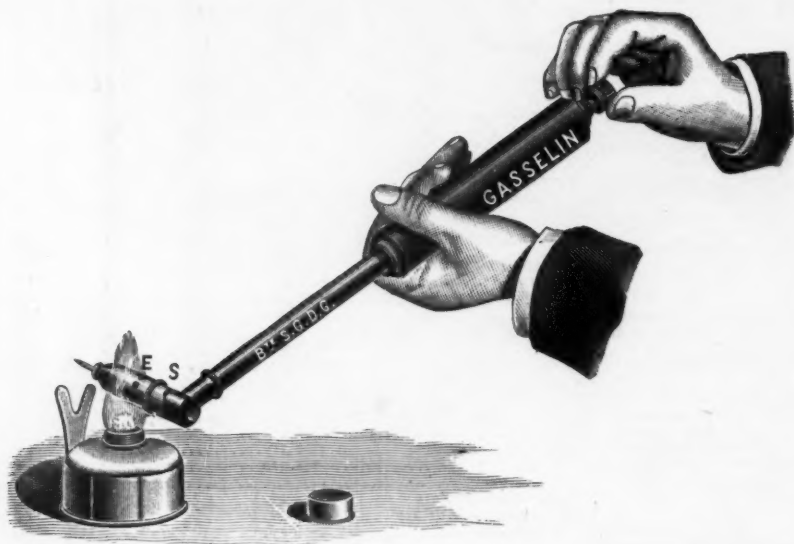
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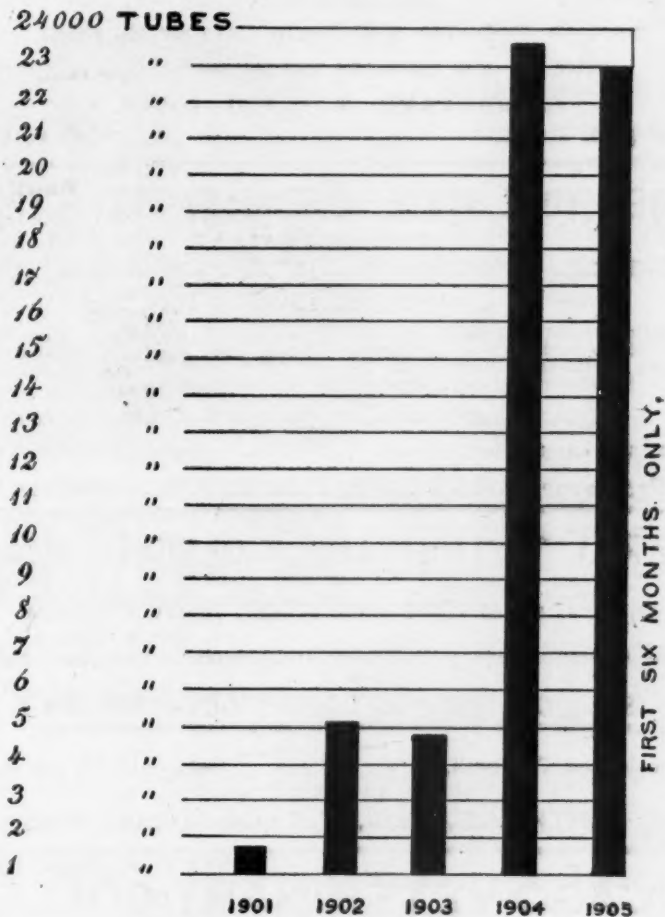
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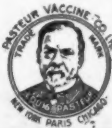
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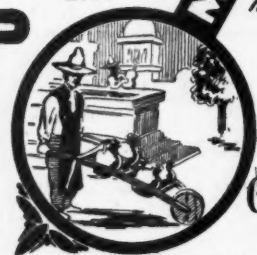
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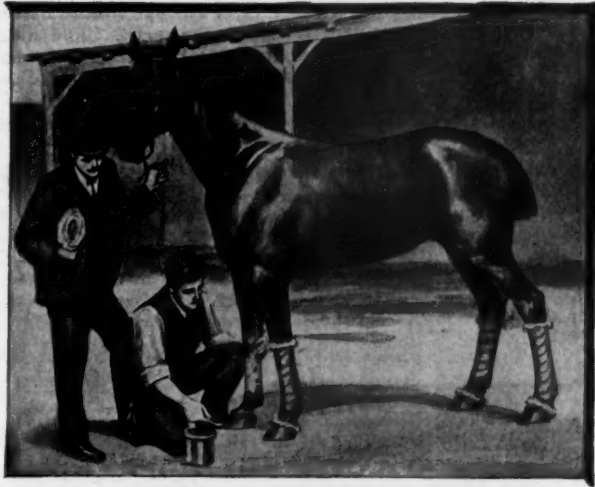


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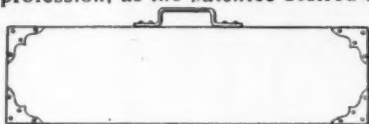
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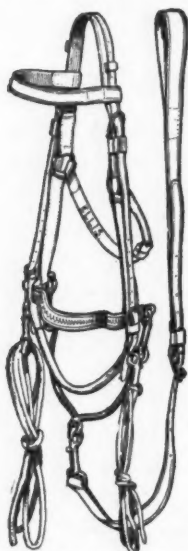
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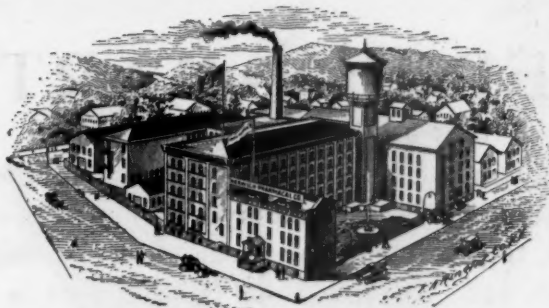
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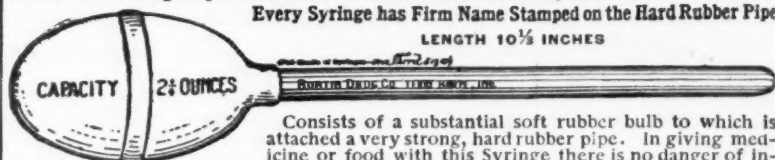
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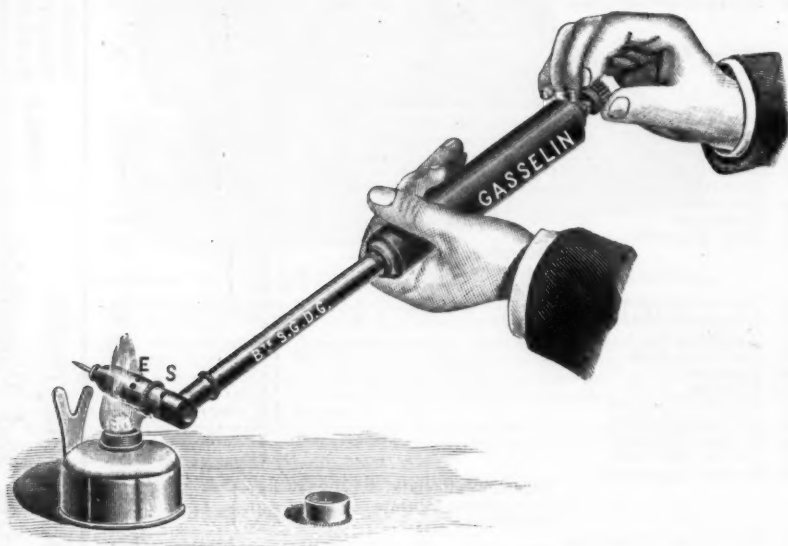
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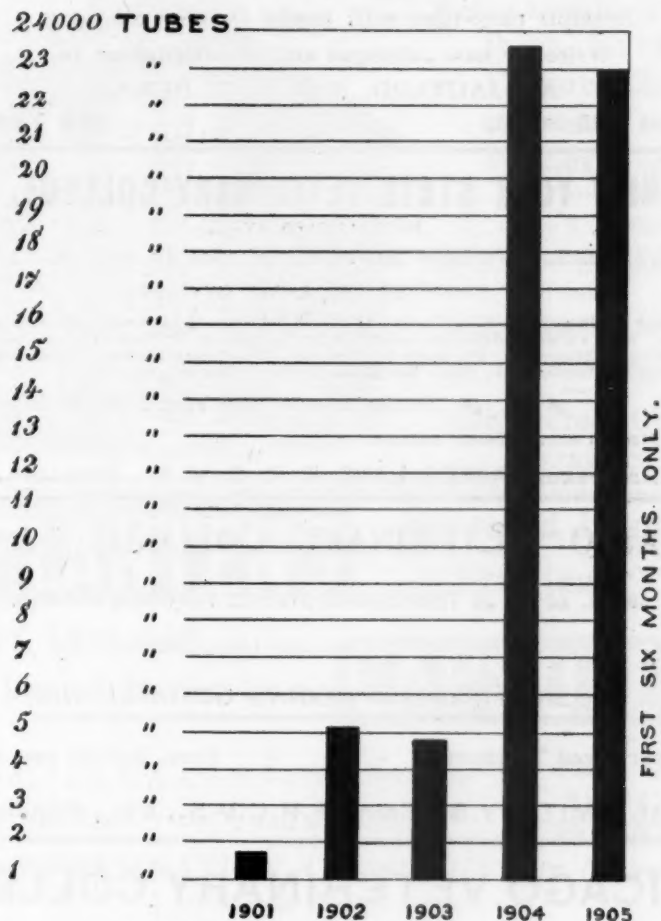
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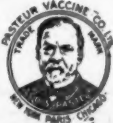
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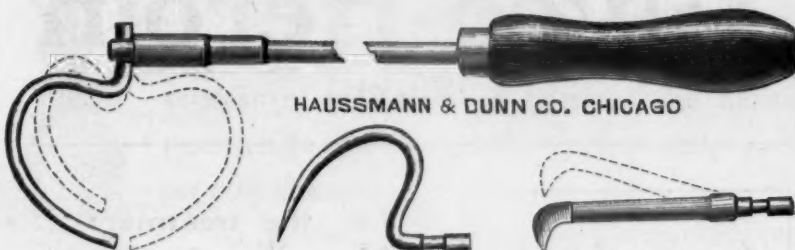
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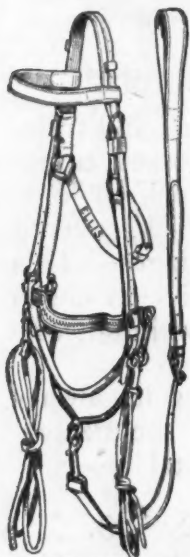
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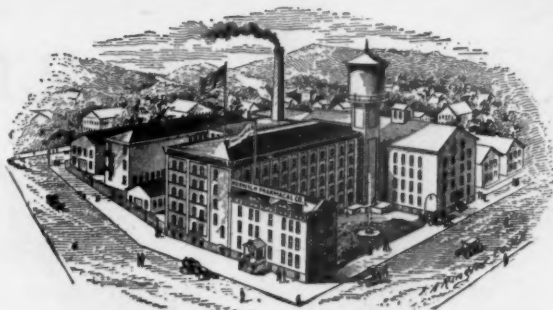
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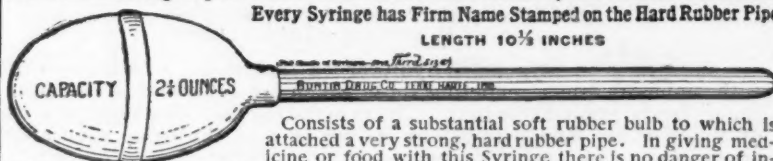
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	{ Morphine Sulph.....	2 grs.	
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134	Conine Hydrobromate.....	1-2 gr.	43
135	Conine Hydrobromate.....	1 gr.	60
136	Digitaline, Pure.....	1-8 gr.	20
137	Digitaline, Pure.....	1-4 gr.	35
138	Ergotine.....	2 grs.	18
139	Ergotine.....	4 grs.	27
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141	Eserine Salicylate.....	1-2 gr.	75
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143	Eserine Salicylate.....	1 1/2 grs.	1 90
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	{ Pilocarpine Muriate.....	1-2 gr.	
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	{ Eserine.....	1-2 gr.	
	{ Pilocarpine.....	1 gr.	
146	Colic (Forbes).....		2 75
	{ Eserine Salicylate.....	1 gr.	
	{ Pilocarpine Mur.....	3 1/2 grs.	
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148	Hyoscyamine Sulphate, Crystals.....	1-4 gr.	1 30
149	Morphine Sulphate.....	1 gr.	19
150	Morphine Sulphate.....	1 1/2 grs.	27
151	Morphine Sulphate.....	2 gr.	33
152	Morphine Sulphate.....	2 1/2 grs.	37
153	Morphine Sulphate.....	3 grs.	50
154	Morphine and Atropine.....		35
	{ Morphine Sulph.....	1 1/2 grs.	
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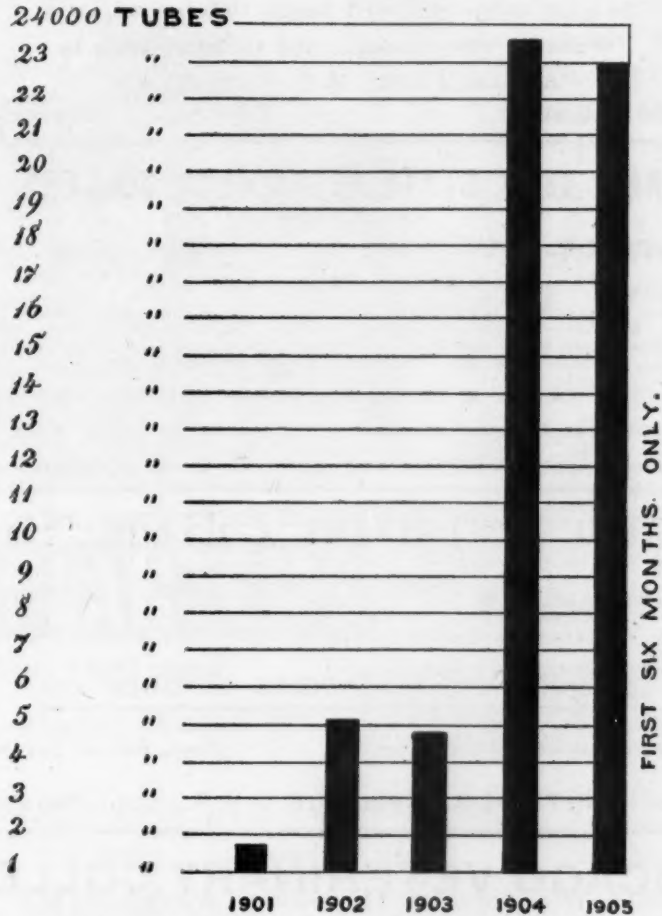
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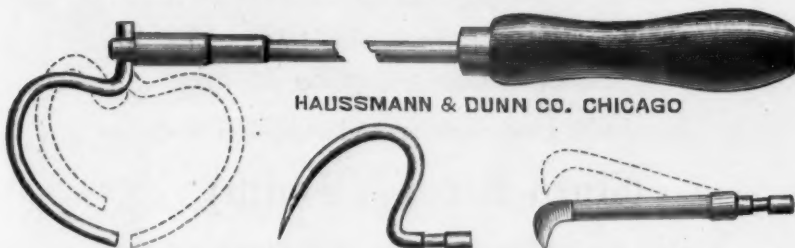
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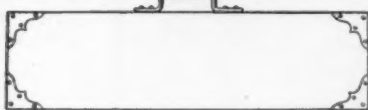
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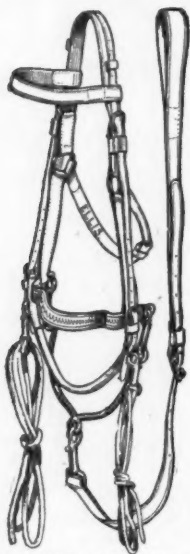
Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession. The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow; the cutting grooves on each, leaning in the direction that it rolls; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction.

The whole makes a handsome, practical, and strictly scientific outfit, which can be carried in a neat case, smaller than a dental roll, and very much lighter. The above described instrument, although patented three years, and in actual use for more than four years, has not been before offered to the veterinary profession, as the patentee desired to perfect every mechanical detail, and get it well beyond the experimental stage, before placing it upon the market; and he now feels that it has withstood tests that merit it a place among the standard instruments of the age.



### AND THE

### "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $2\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

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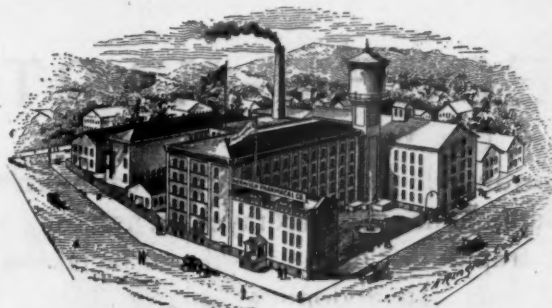
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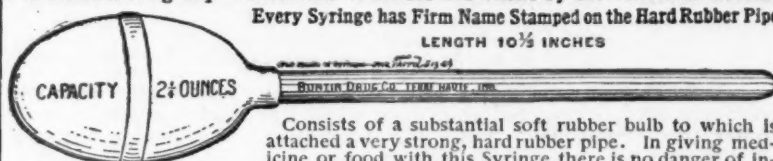
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119	Aconitine, Crystals.....	1-4 gr.	27
120	Aconitine, Crystals.....	1-2 gr.	33
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122	Aconitine, Crystals.....	1 gr.	33
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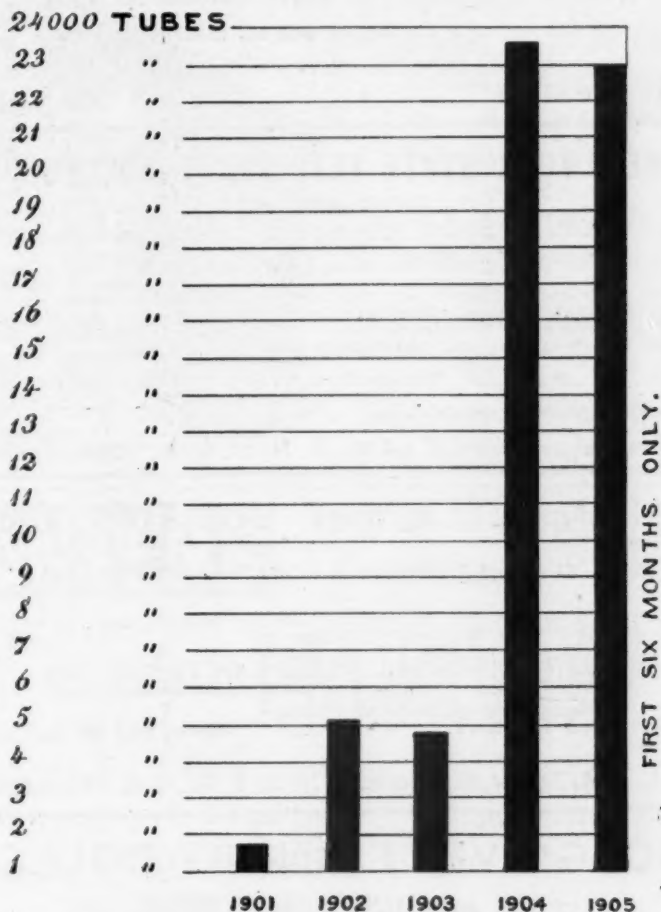
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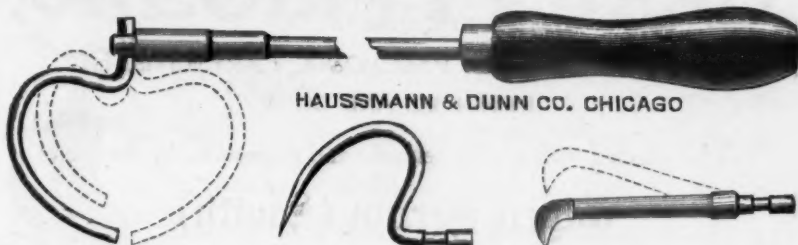
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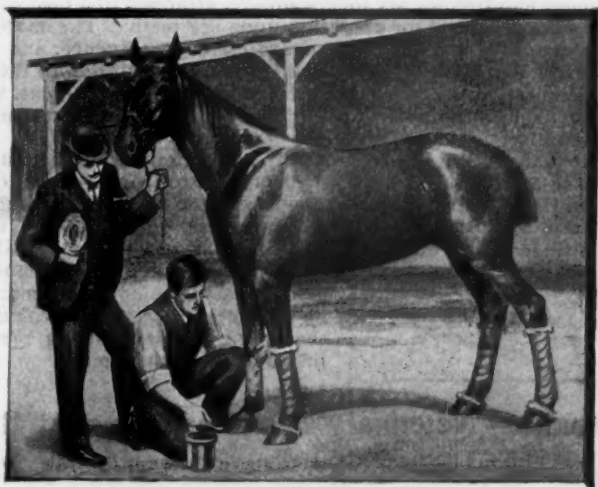


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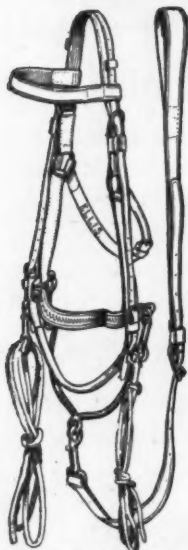
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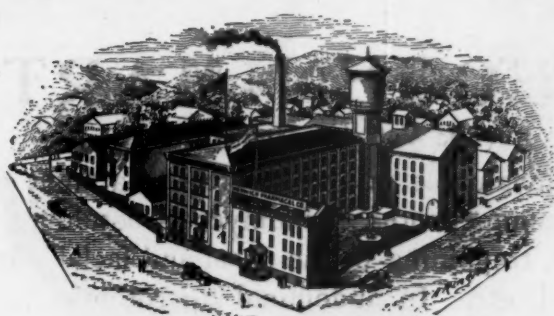
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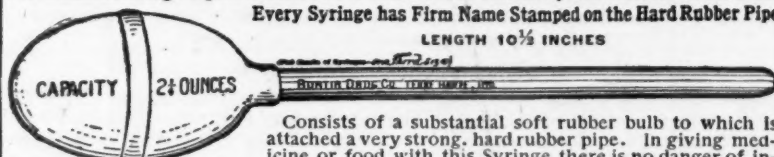
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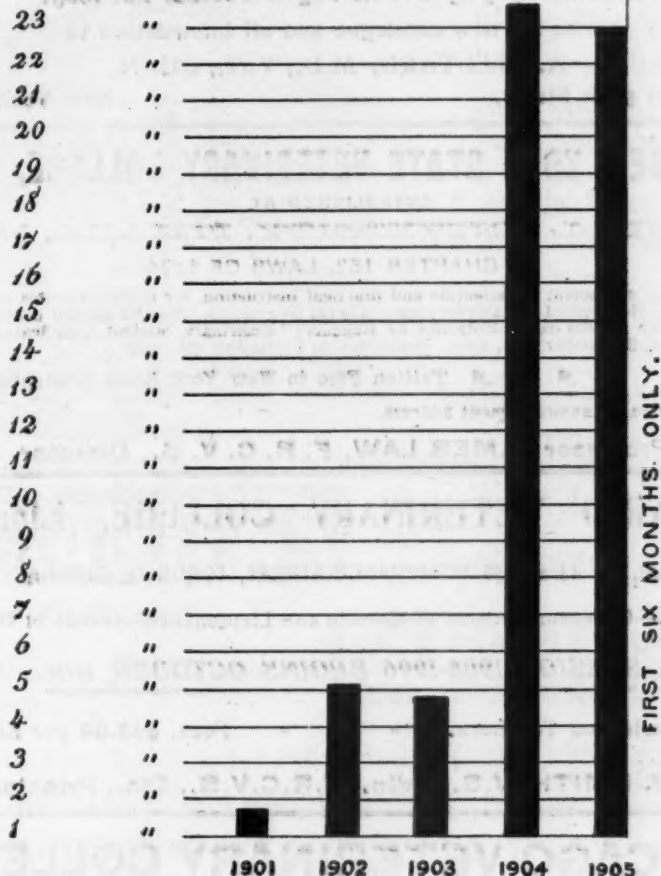
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[continued from advertising page 1]

of which one year previously had been subjected to the inoculation of Behring's vaccine. Prof. Vallée himself conducted the experiments, also the autopsies. One of the vaccinated animals died during the year from an accident, **without presenting any signs of tuberculosis at the autopsy; the remainder were in perfect health at the end of the year, although they had been exposed to various causes of infection.** Some were placed in a stable with tuberculous cattle, some received intravenous, others subcutaneous injections of a virulent culture. The control animals were subjected to the same treatment; all became infected and many died, while others showed extensive tuberculous lesions. In contrast to all this, the vaccinated animals appeared to be immune and did not react to the tuberculin test. The vaccinated animals and the controls were all killed Dec. 2d, 1905, and subjected to a most careful autopsy, and **the contrast between the conditions found in the vaccinated and the control animals is regarded as affording indisputable proof of the value of the vaccine, especially since the conditions of the test were more severe than would likely be met in ordinary practice**".

To those, who do not want to be convinced, these experiments of course prove nothing, but Prof. Vallée, the distinguished scientist, the Society of Practical Veterinary Medicine and the audience at Melun, considered the results of sufficient import, to send von Behring a joint telegram of congratulation "expressing our most respectful admiration for your achievement".

The following is quoted from the "*Berliner Tierärztliche Wochenschrift*", No. 1, 1906: "After extensive experiments and observations, the Commission of Belgian State Veterinarians has obtained most satisfactory results from the use of Behring's antitubercular substance. The Commission, therefore, does not hesitate to declare that the Belgian stock of cattle will be protected, after a few years, from tuberculosis through the Behring vaccination, and that thereafter an infection of man through cow's milk need be feared no longer".

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Strelinger's report is in the course of translation and will soon be mailed to anybody on request, with other literature desired.]

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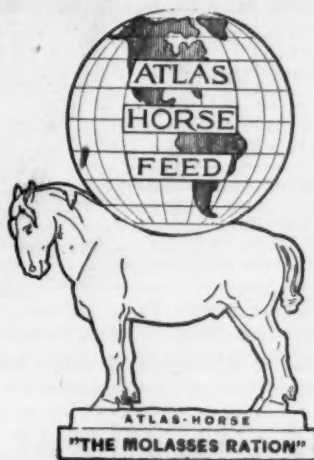
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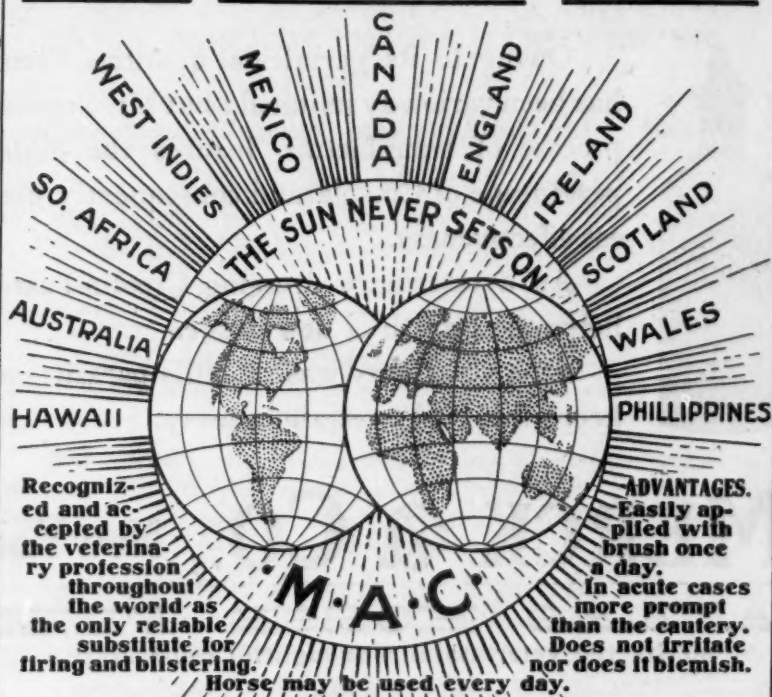
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Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession. The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow; the cutting grooves on each, leaning in the direction that it rolls; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction.

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### "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to  $\frac{3}{4}$  inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

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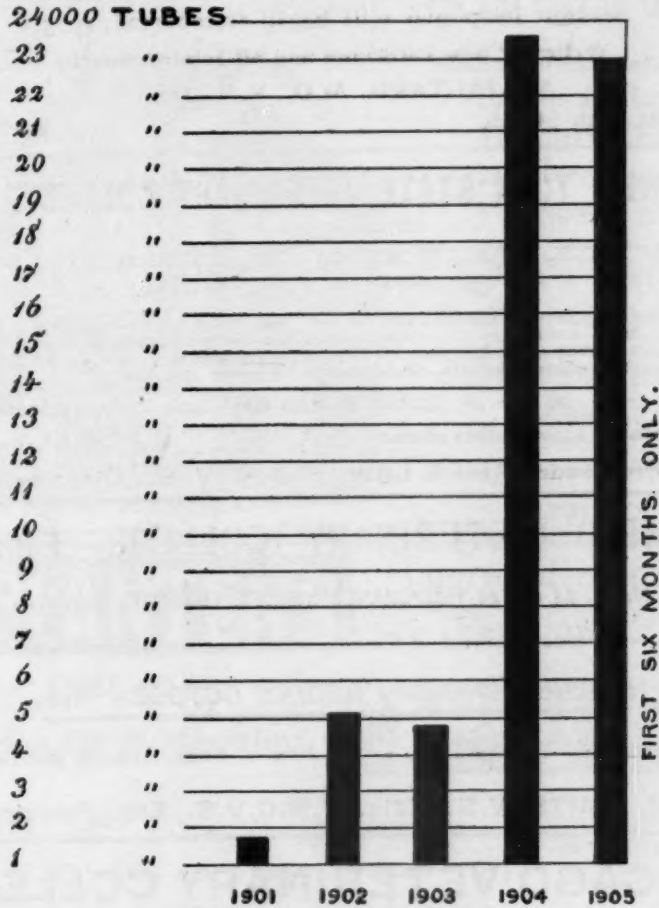
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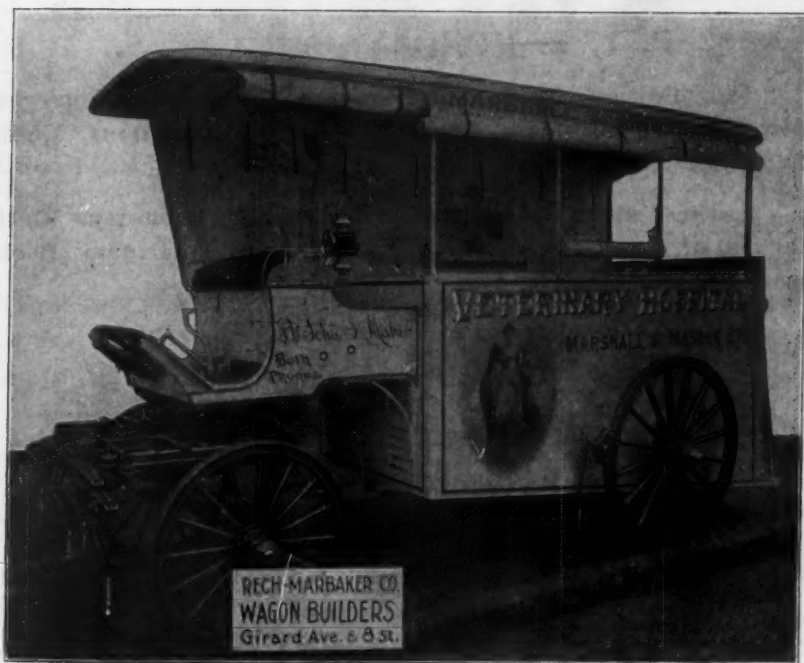
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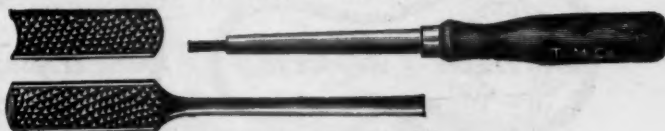
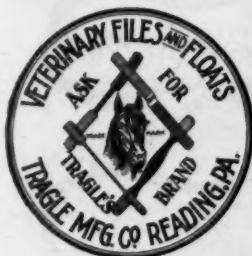
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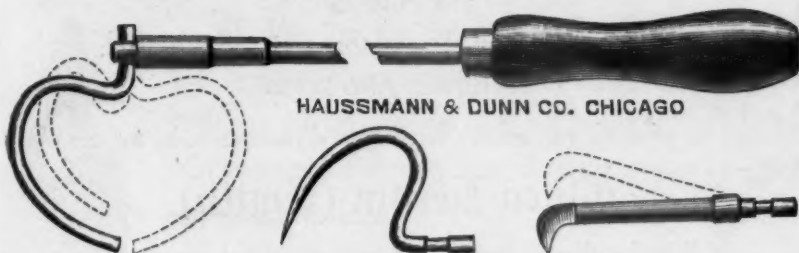
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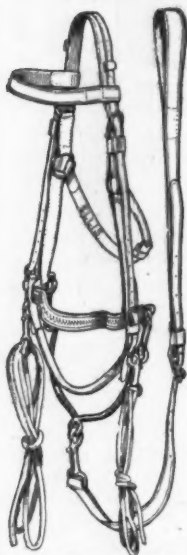
Veterinary Dentistry is revolutionized by a new "float," constructed on a principal entirely different from anything ever before offered to the veterinary profession. The head of the float consists of four parallel cutting rollers, arranged transversely to the handle of the float, in such a manner, that while all four are equally distant from each other, they represent two pairs, the rollers of each pair revolving towards their fellow; the cutting grooves on each, leaning in the direction that it rolls; so that, as the cutters revolve, the tendency is to cling to, and cut, the surface over which they are passed. The depth of the cutting is so regulated, that it cannot exceed a certain amount at each application; so that the work may be done in a positive manner. The float is driven by a small hand-motor six inches square, strapped to a post of the stall in which the horse is backed for operation upon the teeth. The motor can be operated by a stable boy, or anyone, regardless of intelligence, and produces from one to two thousand revolutions of the cutters per minute, as the operator may direct. The power is transmitted from motor to instrument, through a very light, jointed shaft, permitting free movements of the instrument, by the operator, in any direction.

The whole makes a handsome, practical, and strictly scientific outfit, which can be carried in a neat case, smaller than a dental roll, and very much lighter. The above described instrument, although patented three years, and in actual use for more than four years, has not been before offered to the veterinary profession, as the patentee desired to perfect every mechanical detail, and get it well beyond the experimental stage, before placing it upon the market; and he now feels that it has withstood tests that merit it a place among the standard instruments of the age.



### AND THE

### "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

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#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

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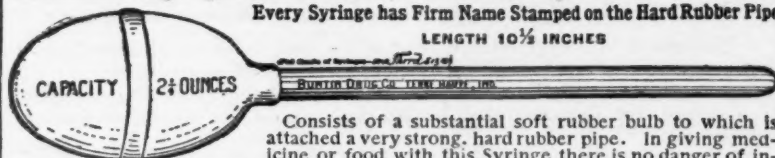
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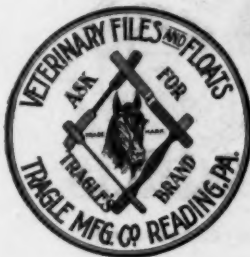
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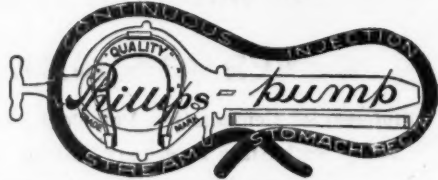
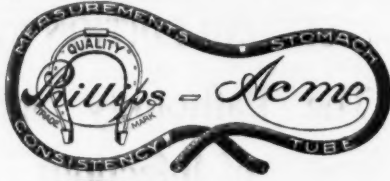
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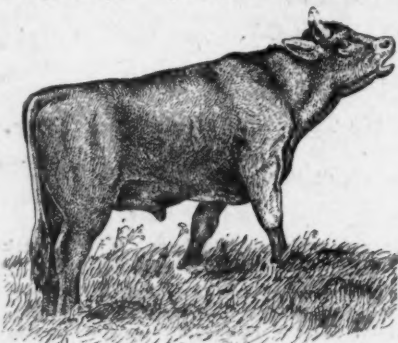
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